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THE
FARMERS' CABINET,

AND

AMERICAN HERD-BOOK,

DEVOTED TO

AGRICULTURE, HORTICULTURE

AND

RURAL AND DOMESTIC AFFAIRS.

~~~~~  
BY **JOSIAH TATUM.**  
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Perfect Agriculture is the true foundation of all trade and industry.—LXXXIX.

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**Vol. XL—1846—1847.**  
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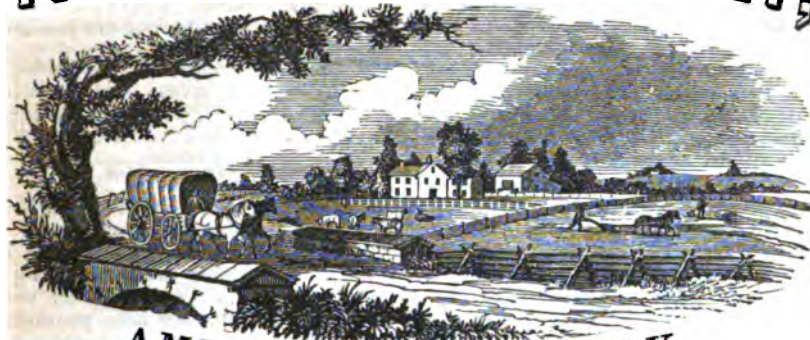
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THE FARMERS' CABINET, AND



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AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

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Premium Farm in New York.

THE State Agricultural Society of New York offered for the year 1845, a premium of \$50 "for the best cultivated farm of not less than fifty acres, exclusive of woodland and waste land, regard being had to the quantity and quality of produce, the manure and expense of cultivation, and the actual profits;" as well as premiums of smaller amounts for farms of second and third grade. Reports are published in the Society's Transactions of last year, and are highly valuable for their practical details. Not having that volume before us we copy the statement of George Godden—to whom was awarded the first premium—from the Cultivator. Various questions were proposed by the Society, which were to be carefully answered by competitors: and we think the following paper will be read with great interest by our practical men who hold the plough, and will understand at a glance, every statement and mode of operation.—Ed.

1. My home farm consists of three hundred acres. Thirty are in wood. About ten acres of the side hills are unsuitable for ploughing, and are only used for pas-

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ture; the remainder is under cultivation, except what is required for roads, yards, &c.

2. The soil is principally a disintegrated gypseous shale, it being the first stratum below the Onandaga lime, running up to and taking in some sixteen acres of the lime, which is covered with about one foot of soil. This is in the wood lot, and furnishes quarries of good stone. There were formerly a few cobble stones on the surface, and one very large granite boulder. A small brook running through the farm is bordered by about forty acres of soil that has been deposited by the brook, and is not suited to the production of wheat. In the valley of the brook is found marl and peat, and at the springs that come from the hill sides, calcareous tufa.

3. I consider the best modes of improving the soil of my farm to be deep ploughing, application of barn-yard manure, free use of sulphate of lime, and frequent ploughing in crops of clover.

4. Unless I am ploughing in manure, I plough from six to eight inches deep. Deep ploughing upon the gypseous shales, never fails to increase fertility. Full trials justify my speaking with confidence on this point.

5. I have not used the subsoil plough, as I have no retentive subsoil on my farm.

6. I apply my barn-yard manure in large quantities at a time, preferring to at once do all for a field that I can in this way. About fifty loads of thirty bushels each, of half-rotted manure to the acre at a dressing.

(9)

My stables are situated on two sides of a square; the manure, as it is taken from the stables, is at once piled in the centre of the yard, as high as a man can pitch it. Sulphate of lime is put on the manure in the stables, and the heap, as soon as fermentation commences, is whitened over with it. My sheep are all fed under cover, and most of their manure is piled under cover in the spring, and rotted. As to keeping manure under cover, my experience has led me to believe, that the best way is to pile it under cover—when it is most convenient to do so—and only then as I am compelled to apply water to the heap to rot it, unless it has received the snows and rains out doors. The coating of sulphate of lime, will, I believe, prevent loss of the gases, and in process of fermentation the heap will settle so close together, that water will not after that enter into it to any considerable depth, particularly if it was piled high and came up to a sharp point.

7. My means of collecting and making manure, are the straw, corn-stalks, and hay raised on the farm, fed to farm stock, and what is not eaten, trampled under foot, and converted as before described, so much of it as goes through the stables. But large quantities of straw never pass through the stables at all; stacks are built in the yards, and the straw is from time to time strewed over the ground, where it receives the snows and rains, and is trampled by the cattle. Embankments around the lower sides of the yard, prevent the water from running off, and confine it in water tight pools, which are filled with straw to absorb the water, except so much of it as is wanted to put on the garden.

8. I make from four to five hundred loads of manure annually, and it is all applied.

9. Most of the manure is put on corn ground. It is drawn on about one-half rotted, and spread over the surface, and ploughed under about four inches deep. The reason I do not plough it under deeper is, that I suppose I must plough deeper the next time to bring up the earth into which the manure has been carried by the rains.

10. I have never used lime in any quantity, excepting in the form of a sulphate as a manure, believing that there is enough in the soil. Sulphate of lime, I use in large quantities; fourteen tons this year. It is sown on all the wheat, corn, barley, and oats, and on the pastures and meadows in quantities varying from one to three bushels to the acre. All the ashes made by my fires is used as a manure, and I think that it is worth as much as the same bulk of sulphate of lime to use on corn. Sulphate of lime has been

used on the farm for many years, and in large quantities, and I think it essential in my system of farming. I have not used salt or guano as manure. I raised this year about

77 acres wheat, yielding	1,616 bu., averaging pr. a.	20 90
154 " corn, "	621 "	52.96
18 " barley, "	665 "	36.94
38 " oats, "	2,249 "	56.55
24 " potatoes, "	292 "	116.80

5,643

50 acres of pasture and 30 of meadow.

12. I sow at the rate of two bushels to the acre, about the 15th day of September. I summer fallow but little, and only to kill foul stuff, and to bring the land into a good state of cultivation. A part of my wheat is sown on land that has been pastured, or mowed, ploughing it but once, but that done with great care, and as deep as I can. The oat and barley stubble, as a general rule, is sown to wheat, ploughing only once, having previously fed off the stubble with sheep so close as to have most of the scattered grain picked up. The ploughing is done as near the time of sowing the wheat as is practicable, and the wheat is sown upon the fresh furrows and harrowed in. I have tried various modes of treating stubble, but none of them has answered as well as this. What little grain of the spring crop is left on the ground is turned deep under, and the wheat being on top gets the start of it. The harvesting is done with a cradle. Corn is generally planted by the 10th day of May, on sod land; most of the manure is put upon this crop. The corn is planted in hills three feet apart each way; from four to six kernels in a hill, and no thinning out is practised. Sulphate of lime, or ashes, is put on the corn as soon as it comes up. Two effectual hoeings are given to it, and a cultivator with steel teeth, is run twice each way of the field between the rows, to prepare it for the hoe. Corn ploughs and cast iron cultivator teeth are entirely discarded.

At the proper time the stalks are cut up at the surface of the ground and put into small stooks, and when the corn is husked, the stalks are drawn at once into the barn, without being again set up. In this way they are kept in good condition, and labour saved.

Oats or barley is sown the next spring on this corn stubble. Of each of these grains three bushels of seed is put upon an acre. As soon as the grain is up, sulphate of lime is sown. These grains are also sowed on sod land. The reason of this is, I cannot command the manual labour necessary to cultivate *one-fifth* of my land in corn, and secure it at the proper season. The rotation of crops I attempt to pursue, is—first,

corn; second, oats or barley; third, wheat on the oat or barley stubble; fourth, clover and herds grass pasture—the seed sown on the wheat—fifth, meadow. But inasmuch as certain portions of my farm are not suited to raising wheat, and as I cannot command the force necessary to cultivate the proportion of corn, I am compelled to modify; but I come as near to this rotation as I can.

The usual time of sowing barley is as soon as the ground is settled—commonly by the 20th of April. The oats are sowed later, generally early in May.

The yield of the crops for this year has already been given, and I think I am safe in saying, that the average of one year with another, upon the system of rotation before given, comes up to that of this year. The pasture will sustain two cows upon an acre, and the hay will generally yield two tons to the acre.

13. This interrogatory has been so far anticipated, that it is only necessary to add, that sometimes manure that is not convenient to draw in the spring, is put upon the corn stubble and upon wheat.

14. This interrogatory has been anticipated, in part. My reasons for applying my manure to corn, are, that I have better means of destroying the seeds of weeds, and from the belief that corn is the best crop to take up that part of the manure that the first crop can use, and that the manure is thus prepared for the crops that follow. Experiments that I have made, go to show that coarse manure benefits the second crop as much as it does the first—and the third crop cannot but receive great benefit from it. The fourth and fifth crops probably do not impoverish the soil. By this rotation, three crops are had for three ploughings; and my experience proves that the soil increases in fertility under this management.

15. Potatoes. In consequence of the disease that has injured this crop, there were but two and a half acres planted this year; the disease was very destructive to my crop last year, but thus far nothing has been discovered of it this year. I have not been able to discover either the cause or remedy for this disease.

16. Herds grass, at the rate of eight quarts to the acre, is sown on bottom land. Clover and herds grass, mixed in equal quantities, is sown on uplands, at the rate of eight quarts to the acre, commonly. Generally sow herds grass in September, when it is sown alone on wheat; but if mixed with clover, sow it in March, on a light snow, if possible; the sowing is done by hand. The last spring I sowed herds grass seed at the rate of eight quarts to the

acre, on a field of wheat that I wanted to mow. Sixteen quarts of clover seed were mixed with the other seed and sown on fifteen and a half acres. In the fall this field was not fed off until the clover headed out, when it appeared finely covered with clover.

17. I usually mow about thirty acres, and expect two tons to the acre. This year the herds grass was killed by a frost late in May, and the estimate made was one ton to the acre. I use the variety of clover known as the "medium," and cut it when one-half of the heads are turned. At this stage a very considerable proportion of the herds grass will be sufficiently advanced for the seeds to mature. The mode of making the hay, is to move it as little as possible. Generally it is put into cock. When the bottom lands are stocked down, clear herds grass used.

18. There is no part of my farm that cannot be ploughed, except the side hills before mentioned. These side hills are in grass and are pastured.

19. I have irrigated a part of my bottom lands. For a few years the grass was very much increased in quantity; but the herds grass disappeared, and a kind of grass took its place of but little value. I now suppose that the water was suffered to remain too long on the meadow, and thus destroyed the valuable grasses. This meadow has been ploughed up, with a view to subdue it, and again seeded with herds grass; when it is to be hoped a second experiment in irrigation may be made with more skill and better success.

The mode of watering the meadow was by a small ditch taken out of the brook, at a point high enough to enable me to convey the water through the middle of the meadow. Lateral cuts from this main ditch, with gates, distributed the water.

20. Of the bottom lands mentioned, about twenty acres were very wet, and may have come under the denomination of "low peat lands." This land has been thoroughly drained, with ditches from three to five feet deep. Very heavy oats were this year raised upon some of this land, and about one-half of my corn was upon this description of land. The next year the whole forty acres are to be planted or sown to oats.

21. There have been four oxen, seventeen cows, and sixteen head of store cattle, eighty sheep, eleven horses, and thirty-three swine kept on the farm the past season, with the exception of a short time. The cattle are either thorough bred, or high grade Short-horns.

22. I have made no accurate and careful

experiments to test the comparative value of different breeds of cattle.

23. No account is kept of the butter and cheese made on the farm, as it is mostly consumed on the premises.

24. There have been but eighty sheep kept on the farm the past season. My flock has recently been very much reduced, with a view to substitute pure Merinoes. My sheep yielded a little over four pounds of wool each, for the whole flock. The pure Merinoe ewes each raised a lamb, and they averaged a little over five pounds to the fleece. I think that about ninety lambs may be expected to be raised from one hundred ewes. I have heretofore raised mutton sheep, but have disposed of all my sheep whose chief value was for mutton, and intend to turn my attention to the raising of wool, as the first consideration. Two dollars have been about the average price I have received for mutton sheep fattened on grass.

25. There have been thirty-three swine, of grade Berkshire, kept on the farm this year. About one-half of them have been slaughtered. Our hogs weigh from two hundred and fifty to five hundred, averaging over three hundred and fifty, when dressed.

26. No accurate experiments have been made by me, to test the value of roots as compared with Indian corn. I fattened my hogs and cattle on corn ground with the cob. Cooked for hogs, and sometimes cooked and sometimes raw for cattle, being governed in this particular by the amount of grain I am feeding. I think corn the most economical grain I can raise to feed, in view of the prices coarse grains usually bring in market.

27. There are about two hundred apple trees on the farm, most of them grafted—spitzenbergs, russets, pippins, &c.,—most of the approved varieties.

28. Pears, peaches, plums, cherries, quinces, &c., are raised in abundance for our own consumption; and we have many of the best varieties of these fruits; five or six of pears, twenty of peaches, seven or eight of cherries, and four or five of plums.

29. Various insects common to this country have depredated upon the fruit trees; the most troublesome of all, is the common apple tree worm. Strong soap-suds applied by means of a piece of sheep skin with the wool on, attached to a pole, is the most effectual means of destroying them.

30. My general management of fruit trees is, to prune them annually, keep them free from insects, and see personally to the selection of scions for grafting.

31. I have applied leached ashes to wheat,

grass, and corn land, without being able to see any benefit.

32. Besides the mansion house, I have four houses occupied by men that work on the farm. Two of these houses have barns connected with them. In a central position is a grain barn, fifty-four feet long and forty wide, twenty feet high, with a stone wall under it—making a granary and sheds. Near the mansion house are the hay barn, sheep barn, and a grain barn fifty-four feet long by thirty-four wide. Basement stories to all these buildings, furnish sheds and stables for the stock; so that every animal I winter, is fed all the valuable food in a rack or manger, and under cover.

Besides these buildings, is the wagon-house, forty-two feet long, with a basement under it; and the tool-house, carriage-house, corn-house, milk-house, smoke-house, ice-house, hen-house, &c. A small mill upon the brook grinds my coarse feed. My yards around the buildings near the mansion, are all supplied with water in tubs, sent there by a powerful force pump under the mill, driven by the same wheel that grinds the feed and saws the wood.

33. The common fence on the farm is posts and boards, the posts set three feet or more in the ground. Of red cedar posts I have about three miles—and of other timber for posts, about two miles. I have something more than a mile of stone wall, made from stone quarried from the quarries mentioned. These walls are built four feet ten inches high, two and a half feet thick on the ground, and eight inches thick on top, having the same slant on both sides, and laid straight and strong. This fence costs me \$1 50 a rod, and I build fifty rods or more every year, upon a system of fencing that in time will put an end to further expense. The board fence costs 88 to 100 cents a rod. There is a considerable portion of my fences of rails, mostly cedar, but no new rails are made. As to the condition of my fences, I would respectfully refer to the report of the committee on farms for this year, for the county of Onondaga, a copy of which report is attached.

34. Most of my fields have been measured, but sometimes more than one kind of grain is raised in a field—and thus the amount of ground covered by each kind of grain is not always accurately known. All the grain raised on the farm is measured, and the measurements entered in books kept for that purpose, by proper men. The work hired by the day is entered in these books, and any other thing that appears of sufficient importance.

These memorandum books furnish most of the materials for a farm book which is kept by myself.

From the farm book, it appears there have been nine hundred and twenty-seven days work done on the farm, from the 1st day of April to the 1st day of November. This account covers all the work done in drawing plaster, sowing it, drawing out manure, threshing and delivering so much of the grain in market as has been sold, and all other men's labour on the farm. There have been produced on the farm five thousand six hundred and forty-three bushels of grain, aside from garden vegetables. Besides this, sixty-six loads of hay.

As the grain is sold, entries are made in the farm book, of the price it brings; and that part of the products of the farm that is kept for home consumption, is estimated at the price it is worth in market. Thus arrived at, the grain and hay raised this year was worth three thousand five hundred and twenty-three dollars and seventy-nine cents.

I have no means of determining the value of the pasture, fruit, and many other things produced on the farm, nor the cost of team work.

GEO. GEDDES.

Fair Mount, Onondaga Co.,
N. Y., Dec. 31st, 1845.

For the Farmers' Cabinet.

Manures for Grape-vines and Fruit Trees.

MR. EDITOR,—A few words if you please on this subject. I am very much disposed to be economical in the use of whatever means I employ for the advancement of wealth and comfort. I dislike, particularly, to see our farmers and horticulturists purchase high-priced and scarce fertilizers, when by using materials which are lying about them, and sometimes going to waste, they might save the cost of their manures, while their crops might not be diminished. This fault, as I consider it, is particularly chargeable upon what are called "book-farmers," or those who read agricultural publications. Many of them commence farming with abundant resources, and by throwing away their money for costly fertilizers, and neglecting the means they have on hand, which would cost them comparatively nothing, they waste their capital, get into debt, and finally are obliged to give up farming with injury to themselves, and disgrace to scientific agriculture. This should not be. Many farmers have mines of wealth upon their plantations which they never take pains to develop, and, indeed, which they often consider a nuisance.

But to our subject. Grape-vines and fruit

trees do not need stable manure, nor any other manure prepared by animals. The best manures for them, are such as have no more nitrogen than is contained in common vegetable matter. Therefore nothing is better for them than plain rotten wood, hay, saw-dust, leaves, chips, shavings, straw, or swamp muck. These, together with lime and ashes—even leached ashes, and anthracite and bituminous coal ashes—will make vines and fruit trees grow large, healthy, and highly productive. These manures cost little, can be had almost anywhere, and may be applied at any time.

Those living in the neighbourhood of a saw-mill, have a fine opportunity of getting a cheap and highly useful article. The saw-dust of hard woods, particularly oak and hickory, is the very best manure for grape-vines and fruit trees that can be obtained. Scattered over the surface of the ground under the vine or tree, with a due proportion of alkaline substances, it has a most charming effect upon the productiveness of it.

A swamp hole upon a farm might be made almost as valuable as a gold mine. The mud taken out in the fall, and compost made of it with lime, ashes, finely powdered charcoal and plaster, and let lie till spring, with an occasional turning over during the winter, will make a manure cheaper and better than nitrate of potash and many other costly fertilizers. Dug or ploughed in among the roots of vines and fruit trees, or even scattered over the surface and under the plants, it would have a very beneficial effect upon the prospects of the fruit raiser. When these cannot be obtained, rotten straw, hay, chips, shavings, or leaves, are better than more costly substances.

Therefore, when farmers or horticulturists have a swamp, whence they may procure swamp muck, or live near a saw-mill where they can obtain the saw-dust, and neglect to use these articles, but instead of this, send hundreds of miles for guano, nitrate of potash, silicate of potash, and other costly materials, we should not at all be astonished at numerous failures among them, and the poverty which annoys and hampers them at every turn. If they alone were the losers, I should not so much complain, for I should consider their suffering and loss as a punishment for their folly; but they retard the course of scientific agriculture, and by that means check the progress of mankind in knowledge and happiness.

Excuse this complaining, Mr. Editor, as it is designed for good, and for that only.

CHEMICO.

Wilkesbarre, Pa., July 22nd, 1846.

For the Farmers' Cabinet.

Improvident Society.

MR. EDITOR,—I forward you the following, trusting it may stir up to a little reflection, some who are not much given to efforts of this character. If it should enable any of your readers to see themselves as in a glass, I shall not regret having sent it.

Y.

A portion of a discourse delivered before the Society for "the promotion of agricultural improvidence," of Poor County, by A. Poorhouse, Esq.

Friends and fellow citizens, also ladies and gentlemen:

I am happy to see before me to-day, so large and intelligent an assemblage, interested as they are, and zealous as I have long known them to be, in the great cause we have undertaken. It needs not my assurance to make known to you how modest I feel on this occasion. You have so long known me that it needs not that I should tell you this, but my evident embarrassment will declare it; indeed my modesty you all know perfectly well, far exceeds my talents or my powers of interesting you. Why I have been selected for this remarkable occasion I cannot imagine. Nearly all of you have known me from childhood, and not one of you, I can with entire truth and perfect fearlessness assert, will contradict me when I say, that a more simple and ignorant person does not exist—one less likely to be of use to his fellow citizens—one less qualified to instruct them in a single thing worth knowing—one more profoundly unacquainted with all the trumpery, science and knowledge of the day—one who feels himself, however, above the meanness so frequently practiced by those whom I see some disposed to respect, of gaining from men or books the knowledge which it has not pleased Heaven to implant in their minds by instinct and nature. Yet with these humble pretensions I have been selected to address you on this interesting occasion. Of one thing I am certain,—and so are you,—that you will have what some of those who are fond of fine language, call the virgin history of my mind. You will have displayed before you. I am proud to say, an intellect totally unembarrassed by the thoughts of others—one that has never foolishly, I may say, impiously, endeavoured to injure by thought or study, the powers Providence gave him. One which, now, after forty years observation, is as clear of all information as it was at five years of age—one that through all my life has continued to cherish and preserve

its early love of doing nothing, and all the torpor, dullness, and indifference that nature gave it. Of these things I can boast, and it is all that I have to be proud of; and to the results and products of an intellect so trained, you are perfectly welcome. May you gain as much by it as I have done. You will not be astonished when I tell you, that for years I have not opened a book—the last I read was Webster's spelling book, but I found so many things in it that I was expected to remember that I thrust it aside. A flogging that I received from that silly old pedagogue, the late Stephen Slapbotham, disgusted me, and I determined from that moment to let my mind take its own course. And I assure you that nothing has given me greater pleasure, than by my own experience to refute the ridiculous idea that some foolish persons have attempted to put about, that activity of mind, and what they call industry, are necessary for one's happiness. It is no such thing—the greatest, fullest source of enjoyment in this world, is to do nothing, and do it well. Of this doctrine we are all examples, and to its truth and beauty we can all bear testimony. Continue, my friends, to act upon it; you will find yourselves much the better for it in the end. If any of you should be so unfortunate as to be encumbered with property, you will in this way certainly rid yourself of it. And you may then move about without anxiety, independent as a bird or a fish, without the perplexity or cares of a home—without the vexation of a wife or a child. Happy condition! who does not look forward to it with hope and happy expectation. Once rid of your money, and you have gained a great object. Have we not high authority for calling it the root of all evil? Should it not then be our aim to waste it as soon as possible? Besides, why should we be ashamed of begging, or of the poor-house? If the large numbers of our fellow citizens are disposed to labour and support us, why not allow them the privilege?

Every encouragement is given to us to live upon the public. In Philadelphia they have a palace, where two thousand and more of those who advocate our principles can pass their lives without care or thought. Men from all parts of our happy country are there. Many from parts of it with which I was not acquainted, and speaking a language I did not altogether understand—from Ulster, Munster, Connaught, Tyrone, all our free and enlightened fellow citizens. My heart leapt within me at such a noble sight, and at such a strong evidence in favour of our ideas. I asked myself why not multiply these institutions, why not scatter

them over the land, instead of urging men to labour and waste their strength by toil!

With these few general remarks I will now proceed to the subject more particularly before us. You have all, probably, been pestered as I have been, with instructions from ignorant people as to how our land should be managed. You have probably had the Cultivator, the American Farmer, or the more distant Farmers' Cabinet, recommended to you by some of those envious and jealous persons, who saw how quietly you took life, and how little you troubled yourselves with its concerns or your own; and who hated you for your content, and for being master of your own time, and understanding how to make use of it. These persons for reasons best known to themselves, no doubt selfish ones, recommend you to take these periodicals. What is there in them of any value to you? You have placed before you examples of what they call industry,—that is, of men who make themselves miserable with anxiety and toil; of men who strive to get a few more dollars than nature intended they should, by what they call improving their land, and raising a little more wheat, or corn, or potatoes. We stand on an eminence so lofty, as to look down on these struggles to gain a few cents. Our aim is ease, quiet—to do nothing, and to let things take care of themselves. Ignorance to us is bliss, then why should we interest ourselves in matters that disturb us, that oblige us to be active and anxious; and which might very probably put on us the cares of wealth. Why should we allow ourselves to be controlled by those sordid feelings that put in motion and govern so many people? No, let there be some high minded and generous enough to look with contempt on what weak and foolish people call industry. How did Adam improve his land, or Noah, or Methuselah, or any of the ancient Christians or pagan philosophers? Farmers' Cabinet's, Cultivator's, and other expensive publications did not exist in those days. Men were not told to their face, by impertinent and intrusive neighbours, that their farms were going down, when they were only left to the kind and paternal care of nature. In those days they trusted more in Heaven than they do now. If they wanted water, they struck a rock; if they wanted something to eat, manna and locusts were found for them; and if they wanted clothes, they made sufficiently good ones from leaves of trees and skins of animals. Were they what we now call industrious? far from it; and there is no doubt we should be treated as they were, if we did not make our land unfit to bear manna or locusts, by constant manuring,

and by other devices that designing men have put upon us. And we surely have trees enough to supply us with leaves, and dogs and cats enough for other garments. Even the hogs in the streets of our large towns, with whose skins they now cover trunks and saddles, would make strong and durable pantaloons. Nature then has provided us with everything; it is only our own perverseness that causes us to misuse and misapply our advantages.

But in this improving our land, do not we destroy many beautiful plants—is not the fragrant toad flax far handsomer than a potatoe—the daisy than a cabbage—and mul-lens and garlic, than onions or beans? No one will pretend to make a comparison; yet all these gladdening as they do, the eye of the lover of nature, we must eradicate, under this system of improvement, and turn our fields to mere grass or grain. In the neighbourhood of that pretty city, Philadelphia, there are many who act up to our ideas, and no doubt reap the full advantage of them. You may see there large fields set out with the daisy, and most tastefully interspersed with clover and grass, so as to give a pleasing appearance to the fields, far superior, in fact, to any grain, or to that coarse and vulgar plant, the potatoe. Then the labour and expense of this improving is very great; and if we were willing to go through the labour, which I am thankful we are not, where should most of us find the money? or if we had this, which, thanks to our own exertions, we have not, who would do the work? Those who advocate this wild and ridiculous system, insult you by telling you that you must take care of your manure, and make as much as you can. And then our system of managing our cattle, differs from that of those who indulge themselves in what is called improving their land. We do not confine our cattle to dirty barn-yards, to trudge all winter through wet dung, up to their knees, and nibbling a little dirty straw; but we let them roam about, and eat the rich, nutritious, dead grass, that lies either on the public road, or near our own fences. This certainly is a very superior system to that of enclosing the cattle.

In some of these agricultural periodicals against which I have warned you, you will find—I understand from others, for of course I never see them—recommendations as to the preserving what they call the juices or liquors of the manures, as if they were speaking of cider or whiskey. They mean, by this, you will be astonished to learn, the having pits or reservoirs for it to run to, whence it is taken off in carts and sprinkled over the grass or some other crop. This

absurd operation is, I give you my word, openly recommended to us republicans and free citizens, and is really performed by one or two weak men, who prefer spending their money in this ridiculous manner, rather than to aid in the support of generous and high minded persons like us, by building such noble institutions as those I told you of in Philadelphia. It is not to be expected that we shall ever commit such follies, far be it from men of our independence of character, to take such liberties with the designs of nature. What! to throw over our grounds any offensive fluid, that is nothing more than refuse matter, instead of taking the obvious hint, to let it run away. What next will these industrious people do? Our plan, on the contrary, appears more rational, we let this matter sink into the ground, where it naturally goes, or if we can, we let it run into some stream, and if this should chance to be one that goes through our spring-house, so much the better, it will give a taste and smell to the milk and butter, that to many persons may be extremely agreeable.

Charring Vegetable Refuse.

THE great advantage of employing refuse which has been submitted to this process, in the cultivation of plants, is now pretty well known. A simple way of charring the vegetable refuse of a garden, is this:—take a few dry faggots, mixed with dry straw, and set up for a centre; around these build up the rubbish, placing the chippings of wood, &c., next the faggots, and the greener parts together with tree prunings, near the outside. Around this, build with saw-dust or green turf, leaving an avenue for lighting the fire. When properly lighted, the hole at the top is closed by degrees, and holes are made lower down the heap, which are in their turn closed up as the fire draws down, and this is continued to the bottom of the heap. When all is charred the holes may be all stopped, and additional covering laid on, to prevent entirely the access of air; in a few days the heap may be opened, and the material will be ready for use; the larger parts for draining flower pots, the smaller for applying on the ground.—*Practical Florist.*

INDIAN MEAL CAKE.—Stir to a cream a pound and a quarter of brown sugar, a pound of butter—beat six eggs, and mix them with the sugar and butter, add a tea-spoonful of cinnamon or ginger—stir in a pound and three-quarters of white Indian meal, and a quarter of a pound of wheat flour,—the meal should be sifted. Bake it in small cups, and let it remain in them till cold.

THE APPLE.—Of all the productions of the earth given us through the agency of a tree or a shrub, by the bountiful Dispenser of every thing that is good, the apple stands preeminent. There are none amongst others of our cultivated fruits, but which some of us would lose with regret; they would, however, be parted with as we part with a luxury. The apple, on the contrary, is not alone a superfluity, but has woven itself into our list of necessities. We speak, of course, comparatively; for the absolute necessities of life are few indeed. In the dessert, in pastry, in marmalades, jellies, pastes, confections; in medicine and the arts; in all these departments the apple takes its allotted place. If so multifarious be its uses, it may readily be supposed that its qualities must be variable to meet these purposes.—*The Fruitist.*

CURIOUS FACT.—A farmer in Vermont, last season, was behind his neighbours in cutting the grass in his meadows; at night, some waggish boys went into one of his meadows and cut down all the grass in it. They also went into his potatoe patch and cut a few swathes through it. At the time of digging the potatoes they were found rotten, except where the boys had cut off the tops, and there they were all found good and sound. This would seem to show that the disease begins in the tops, and it suggests as a means of saving a crop the cutting off the tops so soon as the tops begin to die.

IRON A REMEDY FOR BLIGHT IN PEAR TREES.—A correspondent states that he has found iron ore, or cinders of iron, placed round the roots of trees, drives away the insect which deposits the eggs that produce the worm. Having tried this remedy in a sandy soil, and in a stiff soil, and in places distant from each other; and having driven off the insect when the trees of others were very much injured or destroyed in the neighbourhood, he advises all those who are troubled by these insects, to try the use of iron, rather than be under the necessity of continually topping off the limbs which contain the worm or young insect. He thinks it probable that the iron is unfavourable to the worm, which drops from the branches and makes its wintering place at the root of the tree, and then the insect avoids an unfavourable place for its young. But whatever may be the theory, it is sufficient that iron has the desired effect.—*Gardeners' Gazette.*

Honour and shame from no condition rise;—
Act well your part; there all the honour lies.

For the Farmers' Cabinet.

Culture of Roses.

TO THE EDITOR,—I send for the Cabinet the following observations, translated from the French by H. Meigs, secretary of the *American Institute*, and lately read at the *Farmers' Club*. I find them in the *New York Farmer and Mechanic*.

I have always enjoyed the pleasures of the flower garden, and am gratified whenever I find in the Cabinet some lively article relating to my favourite amusement. I have never believed that the lady who spends her daily half hour among her flowers, or in training her vines, is any the less qualified for the duties pertaining to her household. The mind busily engaged either in labour, or in solitudes incident to a responsible situation, needs recreation; without which there may be danger of its elasticity and strength being impaired. To the busy housewife, where is the walk so delightful as among her flowers? where the labours of the day so easily and enchantingly forgotten, as in the midst of this "poetry of nature?" And none, I am inclined to believe, need conclude that they have not time for these elegancies. Every situation will allow a little time for a little nook, and the dressing and the keeping of this little nook, will have a happy influence in chastening and refining the heart, and the better qualify us for the discharge of every duty.

Please excuse me—when I commenced I did not intend to write this homily to my sex: but it is a favourite subject with me, and if I were not partly afraid to confess it, I would acknowledge the deep interest I feel even in the broad subject of agriculture, in all its operations. The improvement of the land—the growth of the crops—the smell of the new-made hay, and the threshing of the grain, all have charms for me, and whenever the Cabinet reads a lecture on garden or field, it is sure to find me *at home*.

HENRIETTA B.

New Brunswick, N. J.

"It is now nearly three thousand years since the rose was first called the *Queen of Flowers*! I fear not to say, that none of the ancients, not even the Greeks or the Romans, knew truly the merits of this delicious production of nature. Even we, until within the last fifty years, were very far from knowing the value of roses. At a late date we had but quite a small number of roses, of little variety in form and colour in our gardens. There was not among them any to be seen of those varied shapes and

splendid colours which have recently been produced by an intelligent and careful culture. And those beautiful flowers were formerly transient—the bloom of only a single season, so that we were entirely deprived of them for the greatest part of the year. There was but one rose which was vulgarly called the *Rose of Four Seasons*, which occasionally gave its flowers in the autumn, but that was very precarious. Now, however, the whole face of things is changed. Roses have been multiplied in kinds and colours by planting their seeds repeatedly and by a more knowing cultivation; exhibiting now more perfect and diversified varieties of an infinite variety of shades of colour, of perfume, and blooming at all seasons of the year. The ancients called their rose gardens *Rosaria*.

"Monsieur *Loiseleur Deslongchamps*, who visited the *Rosaria* of Paris and its environs, says that he had examined that of M. Victor Verdier, who has been nineteen years engaged in the culture of roses, and has now annually from twelve to fifteen thousand *Eglantine*—*Sweet Brier*—stocks grafted with all the most precious kinds of roses, among them many raised from seed. He has 1500 varieties of roses.

"The garden of Mons. Gauthier contains 75,000 *Eglantines* engrafted with roses, of which 6000 are choice. These *Eglantine* stocks are about forty inches high, with the roses grafted on their tops, and the ground is everywhere covered with strawberries, chiefly the *Alpine*. Among the roses are those fine kinds from the *Ile of Bourbon*.

"Monsieur Jacques, chief gardener of the king, at Neuilly, has planted a great many rose seeds and obtained many very fine varieties. He sowed the seeds of the rose of Bengal, from which we now have roses called of the *Ile of Bourbon*. He plants rose seeds every year."

Dr. Mease.

AGRICULTURE seems, from a very early period, to have been one of Dr. Mease's principal occupations as well as enjoyments. To this he gave the active energies of his manhood and the mature judgment of more advanced life. It was to the last his passion. As Secretary, as Vice-President, and at last as President, of the Society established in this county for the promotion of agriculture, his services were freely given, and always with that kind of zeal that showed that his heart was in the cause. In its promotion he stood side by side with some of the chief citizens Philadelphia has

produced, who have been her pride and ornament, who gave her a character while they lived, and left her one to sustain now they are no more. Tilghman, Rawle, Peters, Vaux, were among the men with whom he acted—men who, from their characters, eminent talents, and devoted love to their country and city, could but inspire in one so active and zealous as Dr. Mease, the desire of emulation, and a feeling of conscious pride that in following where they led, that in imitating their example, in aspiring to their virtues, he would attain a portion of their usefulness, and gain some of the esteem and regard of his fellow-citizens, which their gratitude conceded to these his predecessors. To him the agricultural community are indebted for the introduction of that beautiful breed of animals, the Durham short-horned cattle. He suggested their importation to Colonel J. H. Powel, at the time in England; and it was fortunate that the intimation was made to one so liberal and so well disposed to serve the interest of his country. He was also among the first who endeavoured to introduce the cultivation of silk. His labours and his disappointments were very great in this design. It was in advance of the condition of the country; but credit still belongs to him and his coadjutors, of having projected a plan, that at some future time will probably be of eminent utility to the interests of the nation. This, we believe, was, if not the last, yet the most important of his endeavours, to advance the prosperity of his native country. —*Saturday Courier.*

The Preservation of Roofs.

In the country, where numerous buildings are indispensable for the farmer, and where the roofs are generally of wood, it is a matter of great importance to preserve them as long as possible. Whenever they need repairing, or to be laid anew, they make a heavy item in the year's expenses. We hope the following from the *Farmer and Mechanic*, may prove useful.—Ed.

A WRITER in the *Boston Cultivator*, referring to wooden roofs and their rapid decay, gives the following cheap and simple method of preserving them for many years. He observes, "A friend of mine, who unites much close observation with large experience in building, states that the best preservative of shingles that has come within his knowledge, is to soak them in an alkaline solution of quick lime before they are put on. The plan adopted by him for the purpose, is to prepare a box in which to dissolve the lime, similar to that used by plasterers, and have it elevated, so as to permit the lime water to

be drawn from it, into another box in which the shingles are to be placed that are intended to be impregnated with the alkaline solution. A sufficient quantity of quick lime is put in the upper box, which is slacked and reduced to a thin wash, and well stirred up, when it is permitted to settle.

The shingles are set on end, with their butts down, in the lower box, which is sufficiently deep to permit the parts which will be exposed to the weather when they are put on in courses, to become soaked, by drawing down the alkaline lime water from the upper box into the one below in which they are placed. They should remain in this solution for some hours, when they are removed and suffered to dry, and others substituted in the box to undergo the same operation before they are nailed on the lath.

"No part of white wash or lime should be permitted to pass into the lower box; it being the caustic alkaline solution of the lime only, which is beneficial; it is a powerful antiseptic, interposing powerful obstacles to the decay of wood or vegetable matter of any kind. The presence of the insoluble particles of the lime would tend to clog the pores and interstices of the wood, and impede or prevent the entrance of the alkaline solution of the lime, which is perfectly fluid and transparent.

"An old roof may have its usefulness extended for many years, by simply spreading pulverized quick lime over it, so as to form a very thin coat of it on the roof; by the absorption of the dew, the alkaline solution will be formed, and will penetrate the shingles, which will be cleared from moss and preserved by it, and on the occurrence of a heavy rain the insoluble parts of the lime will be washed off, leaving it clean.

"The tendency of white wash to preserve wood from rotting, is universally acknowledged, but it should be borne in mind, that it is the alkaline solution of the lime only, which has this tendency, and that the gross, insoluble particles of the lime which remain for a time in the form of a scale on the surface to which it has been applied, has nothing to do with its antiseptic powers, and that where the design of its application is to preserve the wood only, it would better accomplish the object by being much more diluted than it generally is, so that the alkaline quality would be more thoroughly absorbed than is usually the case. It is a very curious and interesting fact, that water at the freezing point dissolves twice as much of the alkaline ingredient of lime as boiling water does, so that the use of hot water to dissolve lime is worse than useless."

Interesting Statistics for Wheat-growers and Millers.

THE decline in prices of flour and wheat this spring, has been the source of disappointment to a great many who operated last winter at very high rates, calculating upon large profits to be now realized, and as it appears that those views are entirely frustrated, a calm view into the causes, at this particular juncture, may not perhaps come amiss. After last harvest the crop of wheat was ascertained to be a very large one, and almost every individual engaged in the trade looked for the ruling of low prices, unless something occurred to create an extra foreign demand. Shortly afterward we began to receive accounts from England of the probable failure of the crops there, which immediately gave a spur to prices, and purchases were made for shipment to that quarter—advices continuing to be received confirmatory in that respect, speculation started, until prices ran up in New York to \$7 per barrel for flour. It appears that rate could not be continued—although many anticipated \$8 to \$10—and why?—a few figures will show. The annual average crops of wheat in Great Britain for the past few years, has been equal to twenty millions of quarters of eight imperial bushels of 70 lbs. According to all well informed sources, the crop of wheat there last year was ascertained shortly after harvest to be about nineteen millions of quarters, requiring one million of quarters to be received from other countries to make up said deficiency. The crops on the continent being rather short of previous years, this country was naturally looked to for what Great Britain stood in need of; hence the continued shipments to that quarter even up to the present time. Now what is the state of matters there. By last advices received from that section, per “Hibernia,” the quantity of wheat and flour under lock or in bond, in the United Kingdom, made up to the 5th of April, is thus shown:

Wheat,	1,227,374 quarters.
Flour,	950,871 cwt.—reduced

to wheat, will equal 330,000 quarters—making total of wheat upward of 1,500,000 quarters—50 per cent. more than their actual deficiency. The above stock in bond has been accumulating since, and it would not be surprising if the quantity increase to near two millions of quarters, before any would be released, which is altogether awaiting the action of Parliament on the new corn bill.

Our crop of wheat last season no doubt was the largest ever gathered in this coun-

try. The Commissioner of Patents, who has for a number of years collected statistical information of such things, puts it down to about 106 millions of bushels, but that is evidently below the quantity: 120 millions would be nearer the mark. With our population of 20 millions of inhabitants, the consumption would be

Equal to	90,000,000 bush.
Add for seed	10,000,000 “
Would leave for export	20,000,000 “

The quantity left over of the previous crop is not taken in the estimate, as such may average about the same from one crop to another. The number of bushels put down for export, it will be perceived, is about double of what Great Britain required—say ten millions of bushels of 60 lbs.—our ordinary export demand seldom coming up to ten millions of bushels, or 2,000,000 barrels of flour. Present indications show that the above estimate of the crop in this country is not far, if at all out of the way.

The whole error, therefore, has been, that parties did not look far enough to see what Great Britain actually wanted—as that was the only source we could expect to carry off our extra surplus—but went blindly into it, anticipating that they would never be able to send enough there—and because she required a small quantity, a larger amount must necessarily follow. Some would probably say that the failure of the potatoe crop in Ireland, would require an extra consumption of flour. The difficulty in that respect with the poor peasantry of that country, was their deficiency of means to purchase such an article of food—and if any one would take the pains to examine the English papers, they would find evidence of this in the continual arrivals of wheat, &c., at the different ports in England, from the very *famished* districts in Ireland. No, they went on the coarser articles, such as peas, beans, oatmeal, &c., of which there is an abundance. Again, since the spring has opened, arrivals have taken place in England, from the Baltic and other ports on the continent, of wheat, notwithstanding the talk of great scarcity there also.

Prices will now entirely depend on our next crop—for it is apprehended shipments to England are pretty much at an end for the time being—which to all appearances will be large, if not larger than the last—for the high prices last fall no doubt stimulated farmers to put in greater breadth of ground, in conjunction with which nothing has as yet appeared materially to affect its yield; hence low prices must necessarily ensue—unless we have another *famishing*

country to supply perspectively, and get up speculation, with its unhappy results, such as are now experienced.—*Buffalo Advertiser*.

From the Cincinnati Gazette.

Summer Pruning Fruit Trees, and Thinning Fruit.

It is singular that so little attention is paid by cultivators to the *summer pruning* of fruit trees. This, I presume, is owing to *custom* having made it a general rule to prune trees in the spring. The system is however a bad one, in a certain measure, which may be readily seen by a little observation. For instance, *all trees are liable to make suckers* from the centre, which exhaust the substance of it, and are useless; every one agrees, by common consent, that useless shoots should be cut out, and it is yearly done in the ensuing spring *after* they have impoverished the tree; hence they are deprived of about one-fifth of their substance annually. If these shoots were regularly cut out early, after making some growth, say in May or June, the substance that they exhaust would go to nourish the other branches and fruit. In the second place, trees, grape vines, shrubs, &c., often become very thick of wood in the summer, especially when they are in confined places; all the young wood that is formed in this state is weak and useless, because it cannot receive the *sun* and *air* sufficiently to properly mature it; this, too, like the *suckers*, deprives the tree of a portion of its nutriment, or at least that portion of it that is to bear the succeeding season. This useless wood becomes weak and sickly, the leaves turn yellow, and are a nursery for various kinds of insects, and according to custom is pruned out of the tree the following spring; when common sense tells us it ought to be taken from the tree in summer, in order to give the substance it has deprived the tree of to the proper branches.

I do not contend that the summer is the season for the general pruning of trees; for I prefer the spring for this business; but whenever trees or vines are thickly crowded with summer wood, or any shoots, as suckers or straggling branches, that cause trees to grow of irregular shape, it should be a general rule to displace them, in order to keep the tree in proper shape and in a healthy state.

Thinning of fruit, when young, is also essentially requisite in order that it may grow to its proper size and quality. It often happens, when the spring is propitious

to fruit, that the trees and vines are so loaded that it is impossible for the tree to render it proper sustenance, so that the fruit neither forms into a proper size or quality. This is often the case after a failure the previous season, owing to which the trees are furnished in the interval of rest, with a superabundance of *fruit-buds* or *spurs*; hence we often see *alternate* crops of fruit, which should be as much as possible counteracted, by trimming out a goodly portion of fruit, when such abundant crops appear. This adds much to the quality and flavor of the fruit, and is also of a material use to the tree, in order to give it vigor to furnish fruit-buds for another season in a healthy state, which are weakened by a superabundant crop of fruit, and are often the cause of failure the next season. When sickly trees are overburdened with fruit, which is often the case, owing to weakness, they should be well thinned, in order that what is left may be well matured, for it is very evident that when fruit drops off the tree half grown, it has exhausted it in a measure to a useless purpose.

EDWARD SAYERS.

Consumption of Corn-meal in the West India Islands.

THE consumption of corn-meal and other American produce throughout the British West India islands, since the emancipation of their slaves, has considerably increased. The negro, formerly limited by law to a certain quality and quantity of food, has now his choice of both, as far as his means, obtained by labour, will admit; hence the consumption of pork, beef, butter, lard, cheese, flour, bread, etc., etc., formerly luxuries, are now in general use, and increasing to an immense extent, while the consumption of corn-meal, the only food during slavery, is again reviving, and its use on the increase, from the following causes.

In the Antilles, Jamaica, Barbadoes, and Trinidad excepted, the lands are too valuable, "under a protective system, and at the low price of life's necessities in the United States," to produce corn, yams, *cassadas*, or other substitutes for bread; besides which, the operations of growing and manufacturing sugar cannot be accomplished without combined labour; hence the labourer, allured by the magic of money, which he can readily obtain for his labour, neglects even the small patch of ground on which, as a bondsman, he was entirely dependent for a few pennies to purchase a bit of pork or white bread—"then luxuries."

Barbadoes consumes now from 20,000 to

25,000 barrels of corn-meal annually; whereas, previous to the emancipation, not a barrel was imported. Anterior to the emancipation of slavery, a great many small farmers, called ten-acre holders, existed by raising corn and ground provisions for the use of the planter to feed the slaves; so abundant at times were their crops, that I have known corn to be shipped from Barbadoes to St. Thomas. The natural decrease in labour since the emancipation, by the same number of hands, has, in order at all to approximate former crops, caused an increased demand for labourers, which has drawn this class of agriculturists from their former occupations, finding it more to their advantage to render services for ready money, supplying their wants in market. I do not for a moment pretend to say that Barbadoes is altogether dependent on foreign imports of corn-meal: 25,000 barrels per annum, are but a small portion of sustenance for a labouring population numbering at present 85,000 souls; but I feel fully assured the same causes which have created the present demand are on the increase. Trinidad has increased her population much since the emancipation of slavery. It has, however, as yet, for its extent of country and fertility of soil, a small population, raising within themselves a good deal of corn, and receiving some supplies from South America. The consumption can at present only be computed at 10,000 barrels, while that of Demarara is about 15,000.

Jamaica, with a labouring population of about 325,000 souls, consumes comparatively less than the former-mentioned islands: 30,000 barrels may at present be considered the extent. Large tracts of lands have, since the emancipation, become divided among the labouring classes, producing large quantities of substitutes for cheap breadstuffs. This circumstance, combined with the almost spontaneous growth of fruit and vegetables, makes the labouring classes at certain seasons less dependent on foreign supplies; but as the population is and must continue on the increase, so follows an increase of wants. St. Croix, St. Thomas, and St. John's, are permanent, being fixed by law to seven quarters of meal for each labourer; which amounts, at St. Croix, according to a statement furnished by the Royal Danish Chamber of Commerce at Copenhagen, to 9,500 puncheons, or equal to 38,000 barrels. St. Thomas and St. John's consume about 6,000 barrels. St. Croix consumes but few other American provisions except flour, of which about 4,000 barrels of American; the balance of her consumption, about 3,000 barrels of flour,

large quantities of beef, pork, etc., are supplied by the mother country—Denmark. Yet that island, only 100 square miles, with a population of 34,000, employs yearly about 10,170 tons American shipping. For the general trade of the West Indies, meal in barrels is found most saleable. St. Croix and Porto Rico, however, require their supplies in puncheons, of 800 lbs. net,—such as shipped from Brandywine mills—both on account of its better keeping, and use for the puncheons for rum and molasses.

From the foregoing illustrations, I will now venture upon a general computation of the consumption of corn-meal throughout the West Indies. Antigua, Dominica, Granada, Montserrat, Nevis, St. Kitts, St. Lucy, St. Vincent, Tobago, Guadaloupe, Martinique, the Virgins, and Bahamas, with a population of 184,000 souls, must, in common calculation, consume

Annually about 200,000 barrels, say	200,000 bbls.
Barbadoes, 25,000; Trinidad, 10,000	35,000 "
Demarara	15,000 "
St. Thomas, St. Croix, and St. John's,	44,000 "
Porto Rico, 40,000; Jamaica, 30,000	70,000 "

making 364,000 bbls. corn-meal annually. A branch of trade so easily at our command has hitherto been neglected, or but partially and imperfectly commenced; whereas, with this article, the supplying of every other article of provisions from our port would follow.—*New Orleans Bulletin.*

The Apple Tree.

THE apple, says Thomas Andrew Knight, a writer of well established authority in fruit and fruit trees—is not the natural produce of any soil or climate, but owes its existence to human art and industry; and differs from the crab, which is a native of every part of England, only in the changes which cultivation has produced in it. The first varieties which were cultivated in England, were, no doubt, imported from the continent; but at what period, is not, I believe, known. Many were introduced by a fruiterer of Henry the VIII., and some at subsequent periods; but I am inclined to think that we are indebted to the industry of the planters of the seventeenth, and the end of the preceding century, for most of those we have at present, and probably for all the old fine cider fruits. Of these they have left us a sufficient number; but the existence of every variety of this fruit appears to be confined to a certain period, during the earlier parts of which only, it can be propagated with advantage to the planter. No kind of apple now cultivated, appears to have existed more than two hundred years; and this term does not at all

exceed the duration of a healthy tree. Vegetable, however, like animal life in individuals, appears to have its limits fixed by nature, and immortality has alike been denied to the oak and to the mushroom; to the being of a few days, and of as many centuries. The general law of nature must be obeyed, and each must yield its place to a successor. The art of the planter readily divides a single tree into almost any number that he wishes; but the character of the new trees thus raised, is very essentially different from that of a young seedling plant; they possess a preternatural maturity, and retain the habits and diseases of the tree of which they naturally formed a part.

All efforts which have hitherto been made to propagate healthy trees of those varieties which have been long in cultivation, have, I believe, been entirely unsuccessful. The grafts grow well for two or three years, after which they become cankered and mossy, and appear, what I consider them really to be, parts of the bearing branches of old diseased trees.

When I first observed the unhealthy state of all the young trees of these kinds, I suspected that it arose from the use of diseased grafts taken from old trees, and that I should be able to propagate all the valuable varieties by buds taken from young newly grafted trees, as these can scarcely be said to take any of the wood of the old stock with them; but to remove still farther every probability of defect which might be communicated from the old tree, I inserted the young shoots and buds taken from newly grafted trees in other young stocks, and I repeated this process six times in as many years, each year taking my grafts and buds from those inserted in the year preceding. Stocks of different kinds were also used; some were double grafted, others obtained from the branches of apple-trees which had emitted shoots from cuttings, and others from the seeds of each kind afterwards inserted in them, under the idea that there might be something congenial to the fruits in stocks of this kind. The grafts grew tolerably and equally well in all; but there was a want of hardness and elasticity in the wood, and at the end of three or four years, all began to canker.

Oat Fodder for Horses.

At a discussion had at a meeting of the Darlington (Eng.) Farmers' Club, Dec. 8th, on the best and cheapest mode of keeping draught horses, during winter, Mr. Trotter said:

"I have paid some attention to the subject

of keeping draught horses during the winter; for the last three years I have adopted quite a different mode from what I previously followed. My method formerly was, to allow my draught horses each two bushels of oats per week, together with one bushel of beans, and as much hay as they could eat, generally clover hay. For the last three winters, I have fed them almost entirely on cut oat-sheaf—cut into half inch chaff—which has been a very great saving to me.

"In an oat crop of about forty stooks per acre, which might yield near 60 bushels, the feed of a draught horse averages two sheaves per day, or fourteen sheaves per week, which would be about a bushel and three pecks per week, if they had been threshed out, which is a saving of a peck of oats per week, each horse, from what I formerly gave them; besides, I save the bushel of beans per week, and the clover hay, which was a very considerable item. When I first changed my mode of feeding, the horses improved in condition wonderfully, thus showing that it suits them well. When they are very hard worked, I allow them half a peck of oats at dinner time, besides the cut sheaf.

"Last winter I had only eighteen acres of oats; these kept twelve draught horses, besides four young ones occasionally. This quantity of oats would not have served me through the year, had I not pursued this system of feeding."—*London Agricultural Gazette*.

Wonders of Insects.

A SKILFUL naturalist has been able to perceive that in the body of the lowest caterpillar, which in the common opinion, is one of the most degraded existences on earth, there are upwards of two thousand muscles, all of which can be brought into action with as much facility, at the will of that insect, and perform their several offices with as much accuracy, promptitude, and precision, as the most perfect animal. It would be no easy matter to make some men believe that the most minute insect, whose whole life may be calculated for only the duration of a few hours, is, in all parts, for the functions it has to perform, as complete as the majestic elephant, which treads the forests of India for a century. Little do they suppose, that, even in its appearance under the greatest magnifying powers, it is as elegant in every respect, and as beautifully finished, as any of the largest animals. Unlike the paltry productions of man, all the minute parts of these works of God appear in greater perfection, and afford to us a greater degree of admiration, the more minutely and accu-

rately they are examined. M. de Lisle saw, with a microscope, a very small insect that in one second of time advanced three inches, taking five hundred and forty steps; and many of the discoveries of Leuwenheck were even still more wonderful than this.—*Note Book of a Naturalist.*

Peach Trees.

THE following letter from New Jersey was read at a late meeting of the Farmers' Club, in New York. We could not agree with the writer that the yellows is not a serious cause of failure. We have regarded it about as much so as the worm.—Ed.

It was about the year 1804 or 5, that the grub began to destroy the peach trees in New Jersey. My father had at that time 30 or 40 acres in fine condition and young trees. They began to fail, and in two or three years were either dead or of no value. We found that in proportion as the worms progressed around the trees the same were more or less decayed, and as such has been my uniform observation ever since I have failed in raising as many trees as would even supply my family with fruit until within six or seven years, and of late, have only grown enough to test the certainty of my remedy. Of the many trees which I have examined—I may say thousands—with the exception of one, I have found their failure to be from the worm. I do not believe in the yellows as a serious cause of failure in this part of New Jersey. While I was on a farm I tried very many plans for saving my trees, but they all failed. My belief is, that an insect in the course of the summer deposits its eggs in the body or limbs of the tree, and that before winter the eggs are hatched and the insects find their way to the bark of the root about an inch below the surface of the ground. I have found plenty of them singly, or in clusters in crevices of the bark in October and November; and often—if late in the season—when they have pierced and entered the bark: about that locality, and never above the surface of the ground, or far below. I have tried many experiments on scores of these worms to find their bane, and none has answered better than the *Corrosive Sublimate*. I have prepared it as follows: common tar, 2 lbs.; tallow, 2 lbs.; melt them together, and after they are cooled so much as to hold suspended, add three ounces pulverized corrosive sublimate, and three ounces pulverized common salts of nitre. Stir the preparation from the time it begins to cool until the powder is thoroughly diffused through the entire mass.

Then the earth must be removed from the

trees down to the departure of the roots, and the surface well rubbed with a cloth or brush, and all crevices and defects in the bark freed from the soil. The preparation must then be applied, a little warmed, but not enough to allow the powder to separate from the mass. Then with an old brush thoroughly cover every part and crevice of the bark with the preparation, from the branching of the roots to about two inches above the ground. Surround this surface with a single bandage made of old India rubber cloth, oil cloth, or any cheap muslin well painted and dried for use, or any other covering which will certainly prevent the absorption of the corrosive by the wet earth. Then tie a string around the bandage firmly at the upper end above the ground, and replace the earth and pack it around the tree as before. In the early part of next April take off the bandages, cleanse, and save them for use again. You will find the preparation still on the bark, but no grubs alive, and if any are found in newly dressed trees, they will be nothing more than the skins of worms which had gained an entrance before the dressing was applied. No grub can live under this dressing if applied as is here directed. The corrosive costs about eight shillings per pound, which would be sufficient to protect a large orchard. The whole expense of making the application will, I think, not exceed two cents a tree.

Potatoes.

THERE is a new potatoe called Thurston's Victoria, of which the most extraordinary stories are told, as to its bearing. I do not doubt the facts—but I saw, I should think, two bushels taken from four potatoes once; they may be said to have occupied in actual measurement a plot two feet in width and six feet in length; and this was by the grower multiplied by as many such plots as there were in an acre, and it was given out at once that the said potatoe yielded so many tons to the acre; but the four potatoes were taken infinite pains with, and the place all round them bore nothing, for it was robbed to earth them up; and the mere little plot which they occupied was no criterion of the space required; that plot was all potatoes, and there was no fairness in estimating an acre equally filled, because it would be impossible to fill it. I do not say Thurston's Victoria depends on any such recommendation—but all stories about a thing yielding "at the rate of," should be read with caution. I consider any good new potatoe an acquisition, therefore mean not to discourage any.—*Gardener and Practical Florist.*

White Doyenne, or St. Michael Pear.

S. B. PARSONS, of Flushing, makes the following remarks in relation to this tree, in the American Agriculturist. They may equally apply to other varieties of fruit that may seem to be on the decline.—Ed.

THIS fruit, as we learn from the various periodicals, and from our own correspondents, has been infected with disease, not only in the Eastern States and on the seaboard, but throughout the country, in the interior of Pennsylvania, Cincinnati; and through Ohio, and in the State of New York. A short time since, we wrote to various correspondents for information on this point, and have received numerous answers to the above effect. We learned that the fruit of this variety was infected also about Albany, and in some localities on the Hudson river. We speak of the fruit being infected, for the tree is evidently untouched, and grows with as much luxuriance as any other variety. It is now generally acknowledged that this deterioration in the quality of fruit is owing not to any actual disease existing in the tree, but to the depredations of insects, which it is well known will often prey upon some particular varieties of trees or fruit for successive years. It is, I believe, a fact, that young trees of this variety produce healthy fruit. This is doubtless owing to their greater thriftiness, and to the cultivated condition of the soil. Our own experience would seem to strengthen this opinion, that disease may in a great measure be eradicated by care and high cultivation. Our old Doyenne trees, some forty or fifty years old, had for many years suffered from the common blight. For the last two years the orchard has been highly manured and cultivated, and this year much of the fruit produced is perfectly sound, and with its ancient delicious flavor. The same treatment produced the same result in the Newtown pippin, which had shown some symptoms of the same blight. We have every reason therefore, to think that the white Doyenne has not "run out;" that it is gradually improving, and that by care and cultivation it may be restored to its pristine vigor and perfection.

FENCES and outbuildings should be white-washed, or coated with some material which, while it serves as a protection against the weather, will also add to the neatness and ornate attractions of the homestead. A very durable wash may be formed by mixing with the water, before the lime is slacked, as much salt as will dissolve, or by boiling rice, and mixing the liquid with the mineral after it is slaked.

The Field of Wheat.

By H. F. GOULD.

Field of wheat, so full and fair,
Showing thus thy silver hair,
Lightly waving either way
Where the gentle breezes play,
Looking like a sunny sea,
How I long to gaze at thee!
Pleasant art thou to the sight,
And to thought a rich delight;
Then thy name is music sweet
Silken sounding field of wheat!

Pointing upwards to the sky,
Rising straight and aiming high,
Every stalk is seen to shoot
Like an arrow from the root;
As a well trained company,
All in uniform agree,
From the footing to the ear—
All in order strict appear;
Marshaled by a skilful hand,
All together bow or stand.

Still within the proper bound:
None o'ersteps the given ground,
With its tribute held to pay
At his nod whom they obey.
Each the gem that studs its crown,
Will in time for man lay down.
Thou with promise art replete,
Bearing precious sheaves of wheat!
How thy strength in weakness lies!
Not a robber bird that flies
Finds support whereby to put
On a stalk her lawless foot;
None her predatory beak
Plunges down thy store to seek,
Where thy guard of silver spears
Keeps the fruit and decks the ears;
No vain insect that could do
Harm to thee, dares venture through
Armory like thine, to win
From the sheath the grain within.

What a study do we find
Opened here for eye and mind?
Who that sees thee as thou art
Can disown a grateful heart?
Here upon this favoured ground,
Faith is blessed and hope is crowned;
Charity may find the bread
Wide abroad her gifts to spread;
Wisdom, power and goodness meet,
Beauteous, bounteous field of wheat.

JOHN J. MURRAY, of Springfield, N. J.,—says a New York paper—died recently from skinning a poisoned animal; about two weeks after the act, his left arm upon which the intestines of the animal were carried, commenced swelling badly, and was succeeded by a mortification. Two women who assisted in the act, were also in a dangerous condition.

From the Prairie Farmer.

Wild Ducks Tamed—Beavers.

It is a fact not generally known, that it requires three generations of compulsory domestication to eradicate the wild habits of the duck. Many years ago, in England, a friend of mine took a fancy to domesticate wild ducks. He first had some very young wild ducklings caught and placed with a brood of tame ducks in a pond of water. The young savages all dived out of sight, and completely separated themselves from the brood of tame ducks of their own age. Some died; others occasionally swam with the young tame ones; but on the approach of any person they concealed themselves closely in the little tussocks of grass and reeds at the edge of the pond. As they grew strong enough they fluttered away and were all lost. He next procured eggs of the wild fowl and set them under a domestic duck with an equal number of her own. The young ducks from the wild eggs were as wild as the young ones that were caught, and most of them on attaining sufficient size fled off to their wild kindred and were seen no more.

In the course of many experiments of this kind, he succeeded in making *pets* of one or two birds. They were not domesticated in the regular way of tame poultry, but were pets about the house—would feed out of hand, and like almost all *petted* animals, were nuisances about the house. But the annoyance was endured on account of the great advance in domestication that was supposed to have been made. Their eggs were carefully preserved and hatched under a tame duck. The offspring proved as wild as the young ducks hatched from the eggs taken from the wild duck in its original state. On attaining growth they all went off. This he thought conclusive evidence that wild ducks could not be tamed.

A person to whom he related these circumstances procured wild ducks' eggs, and proceeded with his experiments in the following manner: The wild ducks and tame ducks were hatched together, as in the former case. They were all put to school immediately. The duck house and small pond adjacent were well fenced in, so that no young duck could possibly creep out. The edge of the pond was kept free from much grass and reeds, so that there was but small chance for them to hide. They were shut up every night, and fed at regular intervals. As the young ducks increased in size they were pinioned in some way that prevented their flying. The result of this

experiment was, that in the third generation the ducks became wholly dependent on man for their support—had lost their wild propensities, and were completely domesticated. Although they no longer flew to the woods, their habits were not completely those of the tame ducks. They were more active and watchful, and would frequently dive on the approach of a stranger. Neither had their domestication been sufficiently long continued to change the order and colour of their plumage.

Beavers.—May not the beaver be domesticated with a fair prospect of profit? This peaceful animal, from the ruthless war made upon it by man, is fast disappearing, and the whole race is in danger of becoming extinct. The skin of a beaver, when fat and in season, is worth more than the skin of a sheep with the wool on. Alpacas are being imported from South America. Surely, to save from destruction our *native* beaver, and to cultivate his already valuable qualities, would be as laudable and patriotic an act as to import new animals from foreign countries.

Whoever undertakes it, let him be patient and persevering. Remember the case of the wild ducks.

St. Mariae, Jasper Co., Ill., April, 1846.

GUM ARABIC.—In Morocco, about the middle of November, that is, after the rainy season, which begins early in July, a gummy juice exudes spontaneously from the trunk and principal branches of the acacia tree. In about fifteen days it thickens in the furrow, down which it runs, either in a vermicular or worm shape, or more commonly assuming the form of round and oval tears, about the size of a pigeon's egg, of different colours, as they belong to the white or red gum tree. About the middle of December, the Moors encamp on the borders of the forest, and the harvest lasts six weeks. The gum is packed in very large sacks of tanned leather, and brought on the backs of bullocks and camels to certain ports, where it is sold to the French and English merchants. The gum is highly nutritious. During the whole time of the harvest, of the journey, and of the fair, the Moors of the desert live almost entirely upon it; and experience has proved that six ounces of gum is sufficient for the support of a man during twenty-four hours.—*N. Y. Mechanic.*

THE white of an egg is said to be a specific for fish-bones sticking in the throat. It is to be swallowed raw.

Premiums of the Pennsylvania Horticultural Society.

THE following will be awarded at the Society's Autumnal Exhibition next month:

NATIVE GRAPES.

For the best Isabella, six bunches to be exhibited, \$3.	
For the next best do.	do. \$2
For the best Bland or Powell,	do. 3
For the next best do.	do. 2
For the best Catawba,	do. 3
For the next best do.	do. 2
For the best Elsinborough,	do. 3
For the next best do.	do. 2
For the best of another variety,	do. 3
For the next best do.	do. 2

FOREIGN GRAPES RAISED IN THE OPEN AIR.

For the best Black or Red Hamburg, four bunches to be exhibited,	\$5
For the best Hanstretto,	do. 5
For the best Black Constantia,	do. 5
For the best Chasselas,	do. 5
For the best White Gascoigne,	do. 5
For the best Frontignac,	do. 5
For the best St. Peter's, four bunches to be exhibited,	\$5
For the best of another variety,	do. 5

FOREIGN GRAPES RAISED UNDER GLASS.

For the best, without artificial heat, four bunches to be exhibited,	\$5
For the next best do.	do. 3
For the best, with artificial heat, four bunches to be exhibited,	\$5
For the next best do.	do. 3

PEACHES.

For the best, one bushel to be exhibited,	\$10
For the next best do.	do. 5
For the best, one peck to be exhibited,	3
For the next best do.	do. 2
For the best, two dozen to be exhibited,	2

PEARS.

For the best Seckel, one peck to be exhibited,	\$3
For the next best do.	do. 2
For the best Beurré, or Butter, one peck to be exhibited,	\$3
For the next best do.	do. 2
For the best Bartlett, half a peck to be exhibited,	\$3
For the best of another variety, one peck to be exhibited,	\$3
For the next best do.	do. 2
For the best and most numerous named varieties,	\$5

For the next best do.	do. \$5
For the next best do.	do. 3

APPLES.

For the best, one bushel to be exhibited,	\$3
For the next best do.	do. 2
For the best, one peck to be exhibited,	2
For the best and most numerous named varieties,	\$3
For the next best do.	do. 5
For the next best do.	do. 3

QUINCES.

For the best, half a peck to be exhibited,	\$3
For the next best do.	do. 2

NECTARINES.

For the best, one dozen to be exhibited,	\$3
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PLUMS.

For the best, two dozen to be exhibited,	\$3
For the next best do.	do. 2

WATER MELONS.

For the best, Spanish variety, three in number,	\$3
For the next best,	do. do. 2
For the best of another variety, three in number,	\$3
For the next best do.	do. 2

NUTMEG MELONS.

For the best, three in number to be exhibited,	\$2
For the next best	do. 1

POTATOES.

For the best, one bushel to be exhibited,	\$2
For the next best,	do. 1
For the best American seedling, of superior quality,	\$5
For the best Sweet, one bushel to be exhibited,	\$2
For the next best do.	do. 1

ONIONS.

For the best, four dozen to be exhibited,	\$2
For the next best,	do. 1

CABBAGE.

For the best, six heads to be exhibited,	\$3
For the next best,	do. 2
For the best red,	do. 3
For the next best	do. 1

CARROTS.

For the best, garden culture, two dozen to be exhibited,	\$2
For the next best,	do. do. 1

BEETS.

For the best, one dozen to be exhibited,	\$3
For the next best,	do. 1

LETTUCE.

For the best, six heads to be exhibited, \$2
For the next best do. 1

ENDIVE.

For the best blanched, six heads to be exhibited, \$2
For the next best do. 1

CHARD.

For the best, six heads to be exhibited, \$2
For the next best do. 1

CARDOON.

For the best, six heads to be exhibited, \$2
For the next best do. 1

CELERY.

For the best, six stalks to be exhibited, \$2
For the next best do. 1

SALSIFY.

For the best, two dozen to be exhibited, \$2
For the next best do. 1

EGG PLANTS.

For the best, six in number to be exhibited, \$2
For the next best do. 1

TOMATOES.

For the best, one peck to be exhibited, \$2
For the next best do. 1

CRANBERRIES.

For the best, cultivated, half a bushel to be exhibited, \$2
For the next best do. 1

PUMPKINS.

For the two largest, \$2
For the next do. 1

VEGETABLES.

For the best display, \$10
For the next best do. 7
For the next best do. 5
For the next best do. 3

HONEY.

For the best display, \$5
For the next best do. 3
For the next best do. 2

GREEN-HOUSE PLANTS.

For a group of twelve of the best, named specimens, \$10
For another group of twelve of the next best do. \$5

DAHLIAS.

For the best, fifty named varieties to be exhibited, \$5

For the next best do. 3

For the best, twenty named varieties to be exhibited, \$3

For the next best do. 2

For the best American seedling particular, \$3

For the best American seedling self-coloured, \$3

For the best ten named varieties, grown by amateurs, \$3

For the next best do. do. 2

For the best, grown by amateurs, 2

FOR DESIGNS FORMED OF CUT**FLOWERS, &c.,**

Which are not to occupy at their base more than six feet square.

For the best and most appropriate, \$40

For the next best do. 30

For the next best do. 20

For the next best do. 15

For the next best do. 12

For the next best do. 10

For the next best do. 8

For the next best do. 6

For the next best do. 5

(*) No special premiums to be awarded for designs.

FOR BOUQUETS,

To be confined to those suitable for the centre-table, or the hand.

For the best and most approved, \$7

For the next best do. 5

For the next best do. 3

For the best, formed of indigenous flowers, \$5

For the next best do. 3

For the best pair of wreaths for festooning, \$10

For the next best do. do. 5

For the next best do. do. 3

REMOVAL OF FOREIGN BODIES FROM THE EYE.—A German writer has recently proposed that when a foreign body, such as a particle of straw, dust, &c., gets between the eyelid and the globe of the eye, but without being inflected, a solution of gum arabic dropped into the eye, may be advantageously employed for its extraction, as the solution does not produce any disagreeable sensation.

ABUNDANT crops of hay have been gathered through the country.

Culture of the Strawberry.

THE strawberry is the most delicious and the most wholesome of all berries, and the most universally cultivated in all gardens of northern climates. It is a native of the temperate latitudes of both hemispheres,—of Europe, Asia, North and South America; though the species found in different parts of the world are of distinct habit, and have each given rise, through cultivation, to different classes of fruit—scarlet strawberries, pine strawberries, wood strawberries, hautbois, &c.

The name of this fruit is popularly understood to have arisen from the common and ancient practice of laying straw between the plants to keep the fruit clean. In the olden times the variety of strawberry was very limited, and the garden was chiefly supplied with material for new plantations from the woods. Old Tusser, in his "Five Hundred Points of Good Husbandry," points out where the best plants of his time were to be had, and turns them over, with an abrupt, farmer-like contempt of little matters, to feminine hands:—

"Wife, into the garden, and set me a plot
With strawberry roots, of the best to be got;
Such growing abroad, among thorns in the wood,
Well chosen and picked, prove excellent good."

The strawberry belongs properly to cold climates, and though well known, is of comparatively little value in the south of Europe. Old Roman and Greek poets have not therefore sung its praises; but after that line of a northern bard,

"A dish of ripe strawberries, smothered in cream,"

which we consider a perfect *pastoral idyl*—as the German school would say—in itself, nothing remains to be wished for. We have heard of individuals who really did not, by nature, relish strawberries, but we confess that we have always had the same doubts of their existence as we have of that of the unicorn.

Ripe, blushing, strawberries, eaten from the plant, or served with sugar and cream, are certainly Arcadian dainties with a true paradisiacal flavour, and fortunately, they are so easily grown that the poorest owner of a few feet of ground may have them in abundance.

To the confectioner this fruit is also invaluable, communicating its flavour to ices, and forming several delicate preserves. In Paris a cooling drink, *bavaroise a la grecque*, is made of the juice of strawberries and lemons, with the addition of sugar and water.

The strawberry is perhaps the most wholesome of all fruits, being very easy of diges-

tion, and never growing acid by fermentation, as most other fruits do. The often quoted instance of the great Linnaeus curing himself of the gout by partaking freely of strawberries—a proof of its great wholesomeness—is a letter of credit which this tempting fruit has long enjoyed, for the consolation of those who are looking for a bitter concealed under every sweet.

Propagation and Soil.—The strawberry propagates itself very rapidly by runners,* which are always taken to form new plantations or beds. These are taken off the parent plants early in August, and either planted at once where they are to grow, or put out in nursery beds, or rows, to get well established for the next spring planting. When the parent plants have become degenerated, or partially, or wholly barren, we should avoid taking the runners from such, and choose only those which grow from the most fruitful ones. In order to be sure of the latter point it is only necessary to mark the best bearing plants by small sticks pushed into the bed by the side of each when the fruit is in perfection. Some varieties, as the Prolific Hautbois, the English wood, and the Large Early Scarlet, are not liable to this deterioration, and therefore it is not necessary to select the runners carefully; but others, as the Pine strawberries, and some of the Scarlets, are very liable to it, and if the runners are taken and planted promiscuously, the beds, so made, will be nearly barren.

The best soil for the strawberry is a deep, rich loam. Deep it must be, if large berries and plentiful crops are desired; and the wisest course, therefore, where the soil is naturally thin, lies in trenching and manuring the plot of ground thoroughly, before putting out the plants. But even if this is not necessary it should be dug deeply, and well enriched with strong manure beforehand.

The best exposure for strawberries is an open one, fully exposed to the sun and light.

Culture in rows.—The finest strawberries are always obtained when the plants are kept in rows, at such a distance apart as to give sufficient space for the roots, and abundance of light and air for the leaves.

In planting a plot of strawberries in rows, the rows should be two feet apart, and the plants, of the large growing kinds, two feet from each other in the rows; of the smaller growing kinds, from one foot to eighteen inches is sufficient. The runners must be kept down by cutting them off at least three

* Excepting the *Buck Alpines*, which have no runners, and are propagated by division of the roots.

times a year, and the ground must be maintained in good order by constant dressing. During the first year a row of any small vegetables may be sown in the spaces between the rows. Every autumn, if the plants are not luxuriant, a light coat of manure should be dug in between the rows; but if they are very thrifty it must be omitted, as it would cause them to run too much to leaf.

A light top-dressing of leaves, or any good compost, applied late in the fall, though not necessary, greatly promotes the vigor of the plant, and secures the more tender kinds against the effects of an unusually cold winter. Before the fruit ripens, the ground between the rows should be covered with straw, or light new-mown grass, to keep it clean.

A plantation of this kind in rows, will be found to bear the largest and finest fruit, which, being so fully exposed to the sun, will always be sweeter and higher flavoured than that grown in crowded beds. A plantation in rows is generally in full perfection the third year, and must always be renewed after the fourth year.

Culture in alternate strips.—A still more easy and economical mode is that of growing the strawberry in alternate strips.

Early in April, or in August, being provided with a good stock of strong young plants, select a suitable piece of good deep soil. Dig in a heavy coat of stable manure, pulverizing well and raking the top soil. Strike out the rows three feet apart, with a line. The plants should now be planted along each line about a foot apart in the row. They will soon send out runners, and these runners should be allowed to take possession of every alternate strip of three feet—the other strip being kept bare by continually destroying all runners upon it, the whole patch being kept free of all weeds. The occupied strip or bed of runners will now give a heavy crop of strawberries, and the open strip of three feet will serve as an alley from which to gather the fruit. After the crop is over, dig and prepare this alley or strip for the occupancy of the new runners for the next season's crop. The runners from the old strip will now speedily cover the new space allotted to them, and will perhaps require a partial thinning out to have them evenly distributed. As soon as this is the case, say about the middle of August, dig under the whole of the old plants with a light coat of manure. The surface may be then sown with turnips or spinnage, which will come off before the next season of fruits.

In this way the strips or beds, occupied

by the plants, are reversed every season, and the same plot of ground may thus be continued in a productive state for many years.

Both of the above modes are so superior to the common one of growing them more closely in *beds*, that we shall not give any directions respecting the latter.

It may be remarked that the Alpine and European Wood strawberries will do well, and bear longer in a rather shaded situation. The Bush-Alpine, an excellent sort, having no runners, makes one of the neatest *borders* for quarters or beds in the kitchen garden, and produces considerable fruit till the season of late frosts. If the May crop of blossoms is taken off, they will give an abundant crop in September, and they are, therefore, very desirable in all gardens.

To accelerate the ripening of early kinds in the open garden, it is only necessary to plant rows or beds on the south side of a wall or tight fence. A still simpler mode, by which their maturity may be hastened ten days, is that of throwing up a ridge of soil three feet high, running east and west, and planting it in rows on the south side. The north side may also be planted with later sorts, which will be somewhat retarded in ripening. The best early sorts for this purpose are Duke of Kent, and Large Early Scarlet.

Varieties.—The varieties of this fruit are very numerous, indeed quite unnecessarily so for all useful purposes. They have chiefly been originated abroad within the last thirty years. The different species from which the varieties have been raised, have given a character to certain classes of strawberries, pretty distinctly marked. Thus, from our own Wild Strawberry, or Virginia Scarlet, as it is called abroad, have originated the Scarlet Strawberries; from the Pine or Surinam Strawberry has been raised the class called Pines. From the common Wood Strawberry of Europe, another class, comprising the Woods and Alpines. Beside, there are the Hautbois, from a sort, a native of Bohemia, the Chili Strawberries, from South America, the Green Strawberries, and the Black Strawberries.

Of these the Pines and the Scarlets are the largest and highest flavoured. The Wood and Alpine Strawberries are valuable for bearing a long time, and parting freely from the hull or stalk, in picking.—*Downing's Fruits and Fruit Trees.*

MORE than 35,000 tons of coal were brought down on the Philadelphia and Reading railroad during one week in last month, and the amount of transportation is increasing.

Insects Injurious to Fruit.

Among the difficulties which the fruit grower has to encounter, none are perhaps more annoying or more completely beyond his power to remedy, than the hosts of insects which seem ever ready to prey both upon his trees and his fruit. The following remarks are taken from the *Farmer and Mechanic*, and were made in the Farmers' Club at the American Institute, N. Y., on the 14th ult. We would invite, and indeed urge all to close observation, when they come in contact with these pests: but more particularly is it the province of the amateur to watch and report the result of his investigations.—E.

JONATHAN L. HYDE in the chair.

Chairman—The subject for discussion at this extra meeting, is exclusively, "Insects injurious to Vegetation."

Samuel Allen—An old friend called my attention to his garden in this city. He was mourning over the devastation of his plants by insects. His raspberries, currants, gooseberries, had their leaves full of insects, curling up their leaves around the fruit. Bunches of grapes fallen off from the bite of insects. His vines of squashes, &c., also bitten off. His gardener was busy collecting bugs in a bowl to destroy them: I remark the ravages of insects wherever I go. The prospect is alarming! There seems to be an insect peculiar to each fruit or plant.

This subject of insects opens a wide field, and it is one of immense importance. I present here for your examination, branches of quince and pear trees, showing the destruction caused by the sting of some insect a few feet below the outward ends of the branches. You perceive that the wood is turned black and hard like ebony or black walnut. I also present some quinces nearly covered with an orange coloured moss or excrescence, the interior of the quince, as you see, full of worms. I caused my quince trees to be whitewashed, body and limbs, and now I have not one-tenth of this mischief that I had before, and a neighbour who did not whitewash his quinces, suffers now as I have heretofore.

Col. Skinner—Does whitewashing injure trees?

Dr. Underhill—No Sir. Lime is used to destroy snails, which are very troublesome in England, and sometimes here in very damp weather, in low grounds. A few years since they came on my quince trees, I sifted lime over them and the snails were all dissolved by the lime, or nearly so. This has been a wet season, but I have no more snails. The blight in fruit trees has been ascribed to other causes than insects. But I am decidedly of opinion that blight in pear trees is due to insects. This blight has been

talked of these twenty years, and until very recently, without any suspicion that it was caused by insects. The plum tree is affected, especially the Damascene plum. I observe some limbs are killed, similar to the pear and quince. We have long suffered from a class of insects that sting the apple, pear, and cherry, and destroying much of the fruit at an early period of their growth. We have an insect among us which has been named the *East Wind*, for ten years past, supposed to have curled up the peach leaf and cause it to drop; but a new leaf succeeds. I have this year examined the diseased peach leaf with a glass, and I found that these leaves all had in them great numbers of insects. The nits may have been deposited here by beetles, which were exceedingly numerous at the time the disease appeared. At evening the air about the orchard was darkened by the immense number of these beetles on the wing. The oak leaf is also attacked by them. All this is not the *East Wind*. Formerly some few leaves used to be attacked, now scarce a leaf escapes. This is working an evil in our fruit trees, for although they have new leaves, yet are they enfeebled by it, and the fruit loses its good character. The damage to the peach is not all owing to the worm at its root. And our noble pippin is now assailed by a similar insect, its leaves are all stung. Proper investigation of this subject may lead us to very valuable results. Vineyards suffer least from insects. When caterpillars attack small vines in your yards and eat off the clusters, the best way is to have a sponge on the end of a pole, dipped in spirits of turpentine, the least touch of which makes the caterpillar fall. My vineyard has not suffered from them.

The injury to the leaves of the pear trees from the sting of insects, appears to be commencing. I have succeeded in destroying rose-bugs in my vineyard, by ploughing late in the fall, in cold weather, thus turning out the larva to be killed by cold.

Evening is the time for insect jubilees. Nineteen-twentieths of the beetle tribe and many other insects commit their depredations then. In ancient times fires were made on the high lands north of Egypt, to destroy the armies of locusts. This being supposed a foolish practice, was discontinued, and Egypt again suffered the loss of her crops. Fires made in evening have a happy effect; insects rush into it, drawn by the light. I know a man whose pippin orchard was almost destroyed for two years by canker worms; he made evening fires in the orchard, which destroyed the millers which produced the worm, and then had good fruit.

I suggest the making of fires, with proper care, in orchards, as soon as insects appear, in evenings. And I add, plough the ground well, late in fall in cold weather: it will turn out millions of larvæ to perish by cold. Some say turn in hogs—that has done well; they eat up the fallen fruit and insects in them. There is a prodigious increase this year of the insect which stings the leaves of the apple, very similar to the peach. Apple trees should be well scraped in winter; millions of eggs and larvæ under the rough bark will be killed by it. Leave caterpillars undisturbed and each produces a miller or butterfly to lay more eggs. The nests of these caterpillars are easily destroyed, and by so doing you confer a blessing on all your neighbours as well as on yourself. When I see a man sitting down, looking in despair at the worm nests in his trees, I feel as if I should be glad to give him a galvanic shock to arouse him to his duty to his neighbour and himself. He might just as properly sit still and see his neighbours' cattle, or his own, breaking into his corn-field, without making an effort to turn them out. Last year I destroyed some twenty thousand of these worms' nests in my orchards. In my neighbourhood are wild cherry trees, which are full of these nests, so that when I get a new supply on my place, I owe it to this neighbour as well as to negligent farmers.

All our Agricultural Societies and Clubs ought to take up this insect question. There is a curious excrescence on our wild sweet brier, made by some insect lodged within. The English White Hawthorn is attacked; here is a branch with the young haws upon it, ruined, you see, probably by the same insect which stings the quince tree. I believe that I have discovered the larvæ of this insect, but am not yet positive of it.

Mr. Meigs—Some plants are not liable to the attacks of insects—the *Ailanthus* seems to be one, and a very singular fact is stated relative to the *Lycopersicum*—the *Tomato*—that when legions of locusts devour all plants, poisonous and all—night shade, crows' foot, &c., there has always been one solitary exception, and that is *tomato*. This fact was especially noticed in Estremadura in Spain. I venture to hint that such plants as are avoided by the insects might possibly be planted around pieces of ground, and afford protection to others. I say this, because in seeking for an unknown result, it is safe to try theories or conjectures.

Col. Skinner—You are aware of the importance of the article turpentine, a product of our South, and perhaps also of the fact

that the long-leaved pine which produces it, is disappearing. That it seems like the Aborigines to dislike civilized neighbours. It is disappearing, leaving no young growth to supply its place. And this is also attributed to an insect working at its root. Great numbers of noble pines of three feet in diameter and one hundred and fifty high, stand, some of them stretching their naked arms abroad, others prostrate on the ground, and no successors of their kind.

Man meets with vast power in insect life. What ravages are those of the little ant. In some countries it is probable that no written document or records can long escape their ravages. They devour all. Whole forests have been killed by beetles! In some forests of South Carolina ninety trees out of one hundred have been killed by a small, black winged bug!

The amiable and intelligent ornithologist, Wilson, justly complains of the destruction of birds, more particularly of the woodpeckers, red-headed and ivory-billed, whose services in destroying insects are of such great importance.

Chairman—Between Charleston and Augusta, some few years ago, I noticed a very fair growth of young long-leaved pines.

Dr. Underhill—I must again urge the exceeding usefulness of birds in destroying noxious insects. A *cat-bird* will destroy for herself and her young, hundreds in a day.

In Carolina, it is true, they are compelled to frighten away the rice birds from their rice plantations.

Our crows must be preserved. On my place I have a rookery of many thousands; there are many of them in my orchard all winter. In summer they follow my ploughs all day long, feasting on grubs and worms and beetles. I save one hundred dollars for every one that I lose by my crows. Young corn is easily protected from them. I stretch cotton twine around and across my fields, and the crows never put foot in them; they suspect a trap! During very snowy winters, when deprived of food, they trim my cedar trees beautifully. They nip off with perfect regularity three or four inches of the tender extremities of the branches in their efforts to get the cedar-berry, leaving the form of the tree very handsome, and the trees all grow the better for their pruning! If I had the power, not a solitary crow should ever be killed.

Samuel Allen—The observations of Dr. Underhill are of great importance to our farmers, in reference to the ravages of insects. Some time since in Ohio I stopped to inquire into the cause of the destruction of a neighbouring forest. I was told that

an army of worms or insects which travelled on the ground from tree to tree had done it.

Dr. Field—My orchards are affected in the same way as *Dr. Underhill's*. No allusion has been made to the mode of destroying insects on trees by syringes. Great service can be done that way, even by pure water; but I advise the use of a decoction of tobacco or of soot mixed with sufficient molasses to make it adhere to the leaves. *Dr. Underhill's* mode of scraping off rough bark is good. I have examined the rough bark and found immense numbers of larvae of insects in it. If we had as proper an antipathy to them as we have to snakes, we should soon destroy them.

Judge Van Wyck—The insects and their larvae are many of them so minute and their form so changing, that it is hardly possible to exterminate them. We can only lessen their numbers. I examined some apple trees in Jersey lately, and found the leaves curled up, and on opening them, out flew small flies of slender forms like wasps. I do not know whether this is a new enemy of the apple. After heavy dew or rain sprinkle lime, fresh slaked, in moderate quantity, not enough to burn grain, and the insects in it will be destroyed or driven away. It has been effectually tried on strips of grain, some limed, others next to them not. The limed parts all free of insects, the others nearly destroyed by them. This is one of the many valuable properties of lime which seems to have been placed everywhere by the Deity for good purposes. It is the alkali of the lime which does this service. Where lime is not at hand, ashes will do nearly as well, owing to its alkali. Potashes also good. Scouring trees well is an excellent practice.

Dr. Field—We need accurate information, and I move the adoption of the following resolution:

Resolved—That the members of this Club, and farmers and gardeners generally, be requested to collect, preserve, and send to the American Institute, specimens of such insects as are destructive to vegetables, and such remarks in relation to them as they think proper. And also that the Institute be requested to offer a liberal premium for the best preparation of Entomology, for the benefit of the Club.

Carried unanimously.

Mr. Abraham Wakeman—Twine drawn around and across a corn-field is almost a sure preventive of attacks from crows and crow blackbirds, the latter partaking of the sagacity of the crow. But thus the insect tribes have a feast. Farmers have long tried to kill the insects in corn by dropping alkalies at the roots, and this also increases

the crop of corn. On examination you will find some stalks of corn, when about three feet high, having in them at a little distance from the root, a wire worm, which destroys the inside of the stalk. The law of Connecticut, giving a *black bounty* of ten cents per head for killing crows, has caused men to visit the rookeries of these useful birds, with their muskets, and kill hundreds of them. Man kills the birds, and the noxious insects then multiply their destructive forces. In the northern and some other countries, you will find numerous large dead pines which are said to be victims of insects at the root; no young pines growing in their places.

Chairman—You will hardly ever find young pines taking the places of the old ones.
H. MEYER, Secretary.

Steeping Seeds.

It appears almost incredible, that the mere steeping of seeds should have any prolonged effect on the plant itself, yet the evidence is so strong, if evidence can be given to the proceedings of public institutions, that it were idle to dispute the fact; nevertheless, evidence of experiments should be received with caution. That a good deal more has been attributed to steeping than ought to have been, is certain, and that many whimsical nostrums have been put in requisition, is also obvious. The best authenticated is, perhaps, the effect caused by steeping in muriate of ammonia; and we think that as the fertilizing effects of so small a quantity as half an ounce in a gallon of water—and that used only once in six waterings—are proved, it is not too much to suppose that the steeping of a seed which would imbibe a considerable portion, may assist the future vegetation.—*Horticultural Magazine*.

THE English, though sometimes said to be less practical in their philosophy than the French, are yet generally most remarkable for the stupendousness of their schemes. When Brunnel undertook to make a road way under the Thames, it was thought the ultimatum of bold and visionary projects. A far more gigantic one still, has however been broached in Paris—being no less than a cast iron tunnel beneath the sea, to pass from Calais to Dover, a distance of more than twenty miles. Such an undertaking appears at first view, foolishly bold and visionary; and perhaps it is really so: but when we look at the vast achievements of the last quarter of a century, where money, skill and determined enterprise have operated together, we would feel cautious in declaring it was impossible.

For the Farmers' Cabinet.

Report of Crops raised by James Gowen in 1845.

TEN acres of corn in a field divided into two plats by an under drain, terminating in an open ditch, on one side of which was laid off seven acres, and on the other side three acres for corn—intermediate land including drain and ditch, reserved for ruta бага. In the seven acre plat there were 158 rows, three and a half feet apart, running north and south. In the three-acre plat, 67 rows, three and a half feet apart, running east and west, planted in drills or rows, first week in May. The field had been in grass since 1839—had no manure since, until broken up for corn, when one ton of guano at \$40, was applied. Before husking the whole, a number of rows were taken while the corn was yet standing, in different sections, comprising a fair sample, to furnish a proper average. The rows designated were husked and measured under the supervision of disinterested persons. The 158 rows in large plat, averaged eight and a quarter bushels. The 67 rows in small plat, nine bushels, measured according to usage, so as every two bushels of ears should be equal to one bushel of shelled corn—the whole making 1,906½ bushels of ears, equal to 953 bushels of shelled corn, averaging 95 bushels shelled corn to the acre. The seed was dropped twelve inches apart continuously in the drill, was of course worked but one way, and though an old grass field, I might challenge the whole country for a piece of corn land so free from grass and weeds; and this condition was by no means owing to extra work while the crop was growing, but mainly to judicious harrowing while preparing the land for the seed. Prevention is far better than cure.

In consequence of the Resolution of the Society debarring those who had been awarded premiums in two previous years, from competing with similar crops the succeeding year, I resolved never again to present any crop of my raising for a premium; but having by way of encouragement, promised the premium to one of my men, should the crop of corn be entitled to one, I now submit it on his account.

I take occasion however to state, that I had about seven acres of winter wheat; six of Italian White, and one acre of a peculiar Red, besides one acre of spring wheat—the average of the whole computed at over 40 bushels to the acre. It is worthy of note, that the ground sown with spring wheat yielded the year previous over 900 bushels of carrots. The wheat was sown last spring

without any manure, the condition of the land after the carrots, being considered sufficient to sustain the wheat. After the wheat was reaped it was sown to turnips under a light dressing of scrapings of yard, with about eight bushels of lime—the yield was over 1000 bushels. This will show, in some degree, what land is capable of producing under proper culture.

Here are 900 bushels of carrots at	
40 cents per bushel,	\$360 00
40 bushels Spring wheat, at \$1	40 00
1000 bushels turnips, at 12½ cts.	125 00
	\$525 00

in two seasons, from one acre of land.

I had also eight acres of rye, average yield, 38 bushels to the acre. The carrot crop exceeded in quantity all former crops raised by me—the yield being over 1000 bushels to the acre. Sugar parsnip, 800 bushels, and ruta-baga over 600 bushels to the acre. Of potatoes, I had in three acres, the yield, over 200 bushels of choice potatoes to the acre.

I do not submit these crops for premium, for the reasons already stated; but should the corn be deemed worthy of distinction, you will please award the premium to Solomon Unruh, the individual to whom I promised it.

Respectfully,

JAMES GOWEN.

Mount Airy, March 18th, 1846.

To the Committee on Crops, of Philadelphia Agricultural Society.

N. B. It would be proper, perhaps, to state, that the above Report does not include all that was raised on the farm in 1845—in addition, I housed upwards of 100 tons of excellent hay, notwithstanding the season was not favourable to the grass crop. This will be considered doing pretty well, on an upland farm of some 100 acres, while maintaining during the summer over fifty head of cattle.

J. G.

Dr. Brinckle's Strawberries—New Varieties.

To the Editor of the Farmers' Cabinet:—

MY DEAR SIR,—In compliance with my promise, I now send you a report of some of my horticultural experiments, with a description and the parentage of a number of the new varieties of strawberries I have originated.

In the formation of new fruit of excellence, the most certain mode of proceeding

is by artificial impregnation. By embracing the opportunity thus afforded, of selecting a fine paternal parent, the probability that the offspring will possess superior merit, is greatly increased. But where the whole operation is left to chance, the progeny may have an indifferent or worthless father, and consequently may inherit some of his bad qualities. To insure success and certainty, however, in the artificial process, much caution is required.

Early in the morning select a blossom bud that is about to expand, separate the petals and destroy the male organs if they are present, by extracting every anther with the point of a penknife. The blossom is then to be enveloped in gauze, and tied securely so as to prevent the wind or insects from conveying pollen to the pistils. At mid-day or later, examine the blossoms of the kind with which you wish to cross it. If the anthers of this kind are found covered with a yellow powder which can be rubbed off on applying the finger, then the evidence is conclusive that the pollen is mature and fit for fecundating purposes. With your penknife extract one or more of these anthers, and take them to the blossom which had been covered with the gauze; removing the gauze, place the anthers on the pistils, and reapply the covering. If, in two or three days the petals do not drop off, or cannot readily be detached, fecundation has not taken place. But if the process has been successfully accomplished, the petals being no longer of use drop off, and the gauze may then be removed. So far every source of error is avoided; and there can be no doubt as to the parentage of the new plants so formed. If, however, you apply pollen to a blossom that has already expanded, there is no certainty in your operation, because the wind or insects may have anticipated you. Nor is the use of a brush or camel's hair pencil altogether free from objection, since it may retain pollen used in a previous experiment.

Before closing these preliminary observations on artificial impregnation, I will add, that in relation to strawberries, with a single exception, the females of the various classes of Scarlet, Black, Pine, Hautbois, and Wood, and Alpine, may be readily crossed by any male of these several classes. This single exception is the female Hautbois; it can only be impregnated by a male Hautbois; while a male Hautbois will impregnate the female of any kind.

Having premised these remarks, I now proceed to describe some of the new varieties of strawberries I have formed. A single plant of a number of these kinds was

obtained by Mr. Edwin Middleton, of Darby, and many of them fruited with him; the result he has kindly reported to me.

No. 23, A., was produced from a seed of a berry of Hovey's Seedling crossed with Keens' Seedling. The seed was planted as soon as the berry was ripe, June 17th, 1843. The new plant thus formed, fruited for the first time in 1845; flower small, and without anthers; leaf large, with serratures somewhat acute, and hairy leaf stem; fruit of medium size, round, scarlet; brown seed, in deep indentations, with ridged intervals. With Mr. Middleton this plant proved a great bearer, and bore its fruit on an elevated fruit stalk.

No. 23, B.—*The Abyssinian Prince*—was produced from another seed of the same berry as the preceding kind, and was planted on the same day, June 17th, 1843; fruited in 1845, for the first time; flower small and without anthers; leaf very large and roundish, with curvilinear serratures; leaf stem smooth; fruit good size, ovate, highly glazed, of a very dark crimson colour, almost black, seed not so dark, and inserted in bold indentations; flavour very fine; flesh red throughout. Mr. Middleton exhibited a plant of this kind at one of the meetings of our Horticultural Society this summer, with upwards of sixty very large and magnificent berries on it.

From other seed of the same berry that produced 23, A., and 23, B., also originated 23, C., 23, D., and 23, E.; these had perfect male organs, but as they were shy bearers and inferior to the two first, a description of them need not be given.

No. 24, A., produced from a seed of a berry of Hovey's seedling, crossed with a very vigorous male plant that grew in a bed of Hovey's seedling; planted June 17th, 1843; fruited in 1845; flower rather large, with perfect anthers; leaf large; leaf stem hairy; fruit large, roundish, ovate, crimson, glazed; light seed. Like most kinds with perfect male organs, a shy bearer.

No. 24, B.—*Lizzie Randolph*—so named in honour of the accomplished daughter of Dr. J. Randolph, of this city, produced from another seed of the same berry as the preceding, and planted on the same day; fruited in 1845; flower small, and without anthers; large leaf, with obtuse serratures; leaf stem smooth; fruit large, roundish ovate, scarlet, with brown seed in deep indentations; some of the berries ribbed. With Mr. Middleton this kind proved to be very large, very fine, and very productive; one plant having borne fifty-one berries.

No. 28, C.—*Mary*—so named after one of my little daughters—produced from a

seed of a berry of Hovey's seedling crossed with Keens' seedling, and planted June 20th, 1843; fruited in 1846; flower of medium size, and without anthers; leaf of medium size, narrow, with rather acute serratures, and hairy leaf stem; fruit rather large, conical, bright scarlet; seed in deep indentations, with ridged intervals; fruit in beautiful clusters, on a high fruit stalk.

Nos. 28, A., and 28, B., were from two other seeds of the same berry, and planted on the same day. The former had no anthers, and the fruit was of medium size; in the latter the anthers were perfect, with defective female organs.

No. 29, A., produced by a seed of a berry of spurious Southborough* seedling crossed with the Elton, and planted June 20th, 1843; fruited in 1845; flower small and destitute of anthers; leaf small, and bears some resemblance to that of the male parent; leaf stem hairy; fruit above medium size, cordate, light crimson, and a very abundant bearer; but the fruit lies on or near the ground, close to the plant. Five plants growing in a box seven by ten inches, bore 142 berries.

Nos. 29, B.,—29, C.,—29, D.,—and 29, E., were produced from four other seeds of the same berry. The first had anthers, but was sterile, from imperfection of the female organs; the other three were without anthers, and very productive; fruit of medium size.

No. 35, A., was produced by a seed of a berry of Methven Scarlet crossed with the White Wood, and planted June 21st, 1843; fruited in 1845; flower small, and without anthers; leaf circular, dark green, and somewhat cupped; fruit above medium size, roundish depressed, pale scarlet, with brown seed in superficial indentations. Mr. Middleton reports of this kind, "fruit round, good size, elevated, good bearer."

No. 35, B., was produced from another seed of the same berry; anthers perfect, but a very shy bearer.

No. 40, C.—*The President*,—has already been described in a previous number of the Cabinet.† The fruit with me this season was ovate and very fine.

No. 40, G.—*Emily*—so named after one of my daughters, was produced from another seed of the same berry, planted on the same day; fruited in 1845; flower medium, and without anthers; fruit rather large, ovate,

bright scarlet, glazed; with Mr. Middleton large and productive.

No. 41, B., produced by a seed of a berry of Hovey's seedling crossed with a wild male strawberry, which came attached to the root of a Balm of Gilead, from the State of Maine, planted June 24th, 1843; fruited in 1845; flower medium, and without anthers. With me, the fruit was of medium size, roundish conical, scarlet, with brown seed. Mr. Middleton says of this kind, "large splendid fruit, on a strong fruit stalk, and an immense bearer."

Three or four other plants originated from seed of the same berry; they all had anthers, but were sterile, in consequence of defective pistillate organization.

No. 50, B.—*Buist*—so named after the well known florist and nurseryman of this city, produced from a seed of Bishop's Orange crossed with Keens' seedling, and planted June 28th, 1843; fruited in 1845; flower small, and without anthers; leaf very large; leaf stem hairy; fruit large, roundish ovate, crimson; seed inserted in deep depressions; fine rich flavour.

No. 54, E., produced from a seed of a berry of Bishop's Orange crossed with the Elton, planted June 28th, 1843; fruited in 1845; flower of medium size, with a few small imperfect anthers destitute of pollen; fruit of good size, roundish ovate, highly varnished, dark crimson, nearly as dark as the Abyssinian Prince; seed inserted in bold depressions, flesh very red, with a fine flavour.

No. 58, B.—*Hancock*—so named after the distinguished and enterprising nurseryman of Burlington, N. J., produced from a seed of a berry of Hovey's seedling crossed with the White Wood, and planted June 28th, 1843; fruited in 1846; flower large; anthers perfect; leaf large, with obtuse serratures, and hairy leaf stem; fruit large, roundish ovate, crimson, highly glazed.

No. 62, A.—*Fanny*—so named after my youngest daughter, produced from a seed of a berry of the Methven Scarlet crossed with the Elton, and planted June 28th, 1843; fruited in 1845; flower small, without anthers; leaf resembles the Elton; fruit roundish and of good size. In open culture, this is a very hardy vigorous kind, and very productive. It was grown by Mr. Middleton nearly five inches in circumference.

No. 62, B.—*Clara Victoria*—from another seed of the same berry, has already been described in a previous number of the Cabinet.* With me this season, the fruit was ovate, and very fine.

* This maternal parent was sent to me for Southborough seedling, but was not true to name. The genuine Southborough has large fruit, this had not; the Southborough has anthers, this had none.

† See page 131, last volume.

* Page 131, last volume.

No. 72, A., produced from a seed of a berry of Keens' seedling crossed with the Red Alpine, and planted July 3rd, 1843; fruited in 1845; flower large; sexual organization perfect; leaf large and drooping; leaf stem smooth; fruit borne on high fruit stalk, very large, round, deep crimson, and fine flavour. I know of no large fruited strawberry, with perfect anthers, that will bear a full crop, except 72, A., and its offspring the Cushing; but unfortunately the former is too tender for open culture.

No. 72, B., from another seed of the same berry, has not yet fruited; it has in its foliage a strong resemblance to the father, while 72, A., resembles the mother.

No. 91, produced from a seed of a berry of the White Bush Alpine, crossed with Swainstone seedling, planted December 8th, 1843; fruited in 1846; flower small, with perfect anthers; fruit medium, conical, pale scarlet. It did not inherit the bush and everbearing properties of the mother, nor the fine fruit of the father.

No. 119, A., and 119, B., were produced by two seeds of a berry of the true Southborough seedling crossed with the Conical Hautbois. The leaf of both partook strongly of the Hautbois character; and though the flower appeared to have both organs perfectly developed, not a single fruit was formed. They appeared to be mules.

No. 123, A.—*Adriana*, so named after one of my daughters—produced from a seed of a large berry of Hovey's seedling, grown in the garden of Joshua Longstreth, Esq., planted May 30th, 1844; fruited in 1846; flower above medium, and without anthers; fruit large, conical, bright scarlet; seed in deep indentations, with ridged intervals; leaf medium; serratures obtuse; hairy leaf stem.

No. 123, D.—*Caleb Cope*, so named in honour of the President of the Pennsylvania Horticultural Society—produced from another seed of the same berry, and planted on the same day; fruited in 1846; flower above medium, with perfect anthers; leaf rather small, with serratures somewhat acute, hairy leaf stem, fruit in clusters, on a high fruit stalk, rather large, conical, hairy, deep crimson, highly glazed, and of beautiful appearance; seed placed in slight depressions; flavour very fine and peculiar. On first tasting the fruit, I was forcibly impressed with this peculiarity of flavour:—could it be fancy? I tried another berry; still the same flavour was perceptible: on the following day I tried it again, with the same result. This peculiarity of flavour bears a faint but very perceptible resemblance to that of the Muscat grape of Alex-

andria. Another valuable quality possessed by this kind is, that when ripe, it remains long on the plant in a state of perfection. The fruit is solid, with red flesh.

No. 136, produced from a seed of a berry of Swainstone seedling crossed with the Conical Hautbois, planted June 3rd, 1844. This plant has not yet fruited. Some of my horticultural friends entertain the opinion that the Hautbois strawberry will not amalgamate with any other kind. A glance at No. 136, will satisfy them of the incorrectness of this opinion; for the structure of the leaf is essentially that of the Hautbois, from which it differs only in not being pointed.

No. 145, E., produced by a seed of a berry of Buist's prize strawberry crossed with the Old Pine, planted June 8th, 1844. It fruited in 1846; flower large, with perfect anthers; fruit above medium, pyramidal, dull scarlet, with chocolate coloured seed set on a smooth surface, without indentations; flavour fine; leaf rather large, with obtuse serratures, and hairy leaf stem.

No. 147, B.—*Middleton*—so named after Mr. Edwin Middleton, of Darby, one of our most skilful fruit cultivators—produced from a seed of a berry of Methven Scarlet, without anthers, grown near Cox's Hybrid, Old Pine, Downton, and Southborough seedling, planted June 8th, 1844; fruited in 1846; flower very large, with perfect anthers; leaf medium, rather narrow, with obtuse serratures, and hairy leaf stem; fruit large, roundish, crimson.

No. 198, E.—*Cushing*, so named as a compliment to J. P. Cushing, Esq., of Boston, to whom I am under a thousand obligations—produced from a seed of a berry of No. 72, A., the anthers not having been extracted; planted May 31st, 1845; fruited in 1846, one year from the seed; flower large, with perfect anthers; leaf large and roundish, like that of Keens' Seedling and Ross's Phoenix; differing, however, from these two varieties, in having a hairy leaf stem; fruit, very large, round, some of the berries with a short neck, light scarlet colour; seed inserted in slight depressions; fine flavour, and very productive. This plant was exhibited at one of the meetings of the Pennsylvania Horticultural Society this summer, with 26 fine berries on it, several of them four and a quarter inches in circumference. Not long since, Mr. Longworth, of Cincinnati, offered one hundred dollars for a strawberry with perfect anthers that will bear a full crop of fruit as large as Hovey's Seedling. Such a strawberry is, I think, the Cushing.

No. 201, D.—produced by a seed of a berry of Longworth's Iowa, anthers not extracted, and grown among a hybrid—Meth-

ven Scarlet, crossed with Hautbois. The seed was planted June 4th, 1845; fruited in 1846; flower medium, with perfect anthers; fruit rather large, roundish, with a large thick neck, occupying nearly half of the berry, deep crimson, with crimson seed. The fruit begins to turn red on the lower part of the neck, while the seeds are green. Leaf rather large, with obtuse serratures and hairy leaf stem.

No. 201, E., produced by another seed of the same berry, planted on the same day; fruited in 1846; flower rather large, with perfect anthers; fruit quite large, roundish depressed, bright crimson, with brown seed in deep indentations; leaf large, with obtuse serratures, and hairy leaf stem.

No. 216, B., produced by a seed of a large berry of spurious British Queen, no anthers; grown near the Percival and Keens' Seedling; the seed was planted June 9th, 1845; fruited in 1846; flower medium, and without anthers; fruit large, conical, scarlet, with brown seed; leaf large, narrow, with smooth leaf stem.

No. 226, E., produced by a seed of a berry of the President; anthers not having been extracted; planted June 12th, 1845; fruited in 1846; flower medium, with perfect anthers; fruit above medium, long ovate, with a neck, crimson, glazed, flavour luscious; leaf small, leaf stem hairy.

No. 226, G.—*Wm. Henry*, so named after one of my sons—produced by another seed of the same berry, and planted on the same day; fruited in 1846; flower above medium, with a few perfect anthers; fruit rich looking, glazed, large, cordate, crimson, with light seed, and fine flavour; leaf medium, serratures not deep; hairy leaf stem.

No. 229, B.—*Virginia*, so named after one of my daughters—produced from a seed of a berry of Lizzie Randolph crossed with Myatt's Eliza, and planted June 13th, 1845; fruited in 1846; flower medium, with a few small, pale, defective anthers; fruit of beautiful appearance, large, roundish, conical, ribbed, crimson; leaf medium; hairy leaf stem.

No. 235, R., produced by a seed of a berry of the President, anthers not having been extracted; planted June 14th, 1845; blossomed April 15th, 1846; the plant at the time being exceedingly small; flower medium with perfect anthers; fruit highly varnished, large, roundish, some cockscomb form, crimson; seed inserted in slight depressions; flavour fine; leaf large, roundish, with obtuse serratures; hairy leaf stem.

No. 244, B.—*Keyser*, so named in honour of the chairman of the fruit committee of

the Pennsylvania Horticultural Society—produced by a seed of a berry of 53, D.—Bishop's Orange crossed with conical Hautbois—without anthers. The seed was planted June 16th, 1845; fruited in 1846; flower above medium, without anthers; fruit large, ovate, with a neck, crimson; leaf medium, serratures obtuse, slightly hairy leaf stem.

It will be perceived that the last described nine varieties fruited in one year from the seed.

I had 254 kinds from seed planted last summer after strawberries were ripe. Of these 254 kinds 62 blossomed this summer. Of the 62 kinds that blossomed in one year from the seed, 43 fruited, and 19 were sterile from imperfection of the pistillate organization. Of the 43 that fruited, 30 had perfect anthers.

Very truly yours,

W. D. BRINCKLE.

Philadelphia, August 3rd, 1846.

Essex Agricultural Transactions.

DANIEL PUTNAM'S STATEMENT.

To the Committee on the Dairy:

GENTLEMEN,—I offer for your inspection, two boxes of September butter, containing 26 lbs., being a sample of 615 lbs., made between the 20th of May and the 20th of September, from the milk of eight cows, some of which have been nearly dry a part of the season, having calved last autumn. The milk of more than one cow, has been sold and used in the family, so that it would not be more than the average milk of six cows. Their feed has been a poor pasture, one quart of meal per day, with some mown grass or corn stalks.

Process of making the butter.—The milk is kept in tin pans. After standing from thirty-five to forty-eight hours, the cream is taken off and put into tin pails. We churn twice a week. When the butter milk is drawn from it, we thoroughly rinse it in cold water; it is then taken from the churn, worked in part, salted, an ounce of salt and one-fourth of an ounce of loaf sugar to the pound. In about twenty-four hours it is worked the second time.

DANIEL PUTNAM.

North Danvers, Sept. 24th, 1845.

WASH your teeth at night, of course. Why sleep with minute decomposing particles in your mouth, affecting your teeth, your breath, and your health? Wash also after every meal, when convenient.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, EIGHTH MONTH, 1846.

WITH this number commences the eleventh volume of the FARMERS' CABINET. In entering upon it, it is natural to turn back, and look a little over the volume just closed. In doing so, the editor may be indulged in the expression of the belief, that he has given to his subscribers a volume which cannot fail to be abundantly more valuable to them than the price it has cost them. We are not prepared to say that the Farmers' Cabinet is the best agricultural paper in the world, or to boast of our tens of thousands of subscribers; but we are willing—and we acknowledge some degree of pride in the feeling—to place our little favourite along side of any of its cotemporaries, and so far as plain, matter of fact, substantial usefulness to those it is intended for, is concerned, let it speak for itself, and make its own quiet declarations. As to our list of subscribers, we think it is not half so large as we deserve, and we are sure it is not one quarter as full as we would like.

We enter upon a new year, disposed to do our best, and while we wish our subscribers multiplied, we also wish for them health, happiness, and agricultural success.

We omitted to state in our last number, when a list of premiums was published, that our Agricultural Society will hold its approaching Annual Exhibition at the *Rising Sun*, on the Germantown road, where it has been many times heretofore held. It may not be amiss to repeat, that the time is the 30th of next month, and the 1st of Tenth month. The ploughing match to be on the second day of the Exhibition.

JAMES S. LAWRENCE, of New Egypt, Monmouth co., N. J., two or three years ago, informed us of his success in the preservation of apples. *He puts them down in dried oak saw-dust.* The editor of the Princeton Whig, was shown apples a few weeks since, preserved in this way, gathered in 1844 and 1845.

THE *Horticulturist and Journal of Rural Art and Rural Taste*, edited by A. J. DOWNING, author of *Landscape Gardening, Designs for Cottages, Residences, Fruits, and Fruit Trees of America, &c., &c.*, has been received upon our table. It will be published monthly, by Luther Tucker, at Albany, in pamphlet form, at \$3 per annum, and may also be obtained of G. B. Zeiber & Co., of this city.

It is the object of the editor to assist as far as possible, in giving additional impulse to the progress of horticulture, and the tasteful in rural life. His ability to do this, has been very well established by the works above named, which he has already published, and which are doing much to spread among all those inter-

ested in country pursuits, that kind of taste, the cultivation of which will be found materially to add, in almost every position of life, to its comforts.

The first number of Vol. 4, of the *American Quarterly Journal of Agriculture and Science*, is on our table. It is conducted by Dr. Emmons, A. Osborn, and O. C. Gardiner, and published by Huntingdon & Savage, New York, at \$2 per annum. This number, like its predecessors, contains a large amount of valuable matter, and we wish the editors increasing success in their enterprise.

In the last number of the *Southern Cultivator*, published at Augusta, Ga.—an excellent paper, by the way, and one we have had frequent occasion to refer to,—we found a slip containing a proposal of our friend McDonald, of Eufaula, Alabama, that he would be one of a thousand who should each procure twenty subscribers, and thus place the *Cultivator* upon a pretty high horse. We were also requested to "call attention to this proposition;" but whether for the purpose of serving our own interests, or those of our Augusta friends, they do not explicitly state. We however take pleasure in assuring agriculturists of the South, whether 20,000 or twenty times that number, that after having subscribed for the Farmers' Cabinet, they can hardly appropriate another dollar better than by ordering the *Cultivator*; but let them be sure to supply themselves with the Cabinet first.

We regret to be obliged to state, that frequent mention is made in our exchange papers from Delaware, of the appearance this summer of the potatoe rot. Our friends in Jersey inform us, that it is much feared in some neighbourhoods on that side of the river. We also learn that it has made its appearance in our own immediate vicinity.

The corn crop, from present appearances, very generally promises well in this vicinity. This is also the report from more remote sections.

TREES FOR SALE.

The Subscriber has for sale at the Mount Laurel Nursery,—established by J. Needles—an extensive assortment of Apple, Pear, Peach, Plum, and Cherry Trees and Grape Vines. Also, a great variety of

ORNAMENTAL AND EVERGREEN TREES,

Which are of the best quality, and good size for transplanting. Orders left with Josiah Tatum, No. 50, N. Fourth street, will be punctually attended to, where catalogues may be procured.

EZRA STOKES.

*Mount Laurel, near Moorestown, N. J.,
Eighth month 15th, 1846.*

Persons wishing trees,—particularly Southern purchasers—are invited to notice the above advertisement. Orders sent to this office, will be promptly attended to, and every care taken to have them faithfully complied with. Catalogues will be forwarded by mail, as they may be requested.

THE Pennsylvania Horticultural Society will hold its seventeenth Exhibition on the 16th, 17th, and 18th of next month, in the Philadelphia Museum, corner of Ninth and George streets, and will occupy the two grand saloons of that building, which will afford ample space for the most extensive display of objects in horticulture, &c.

Contributions from a distance may be transmitted by public conveyance, and the cost of transportation will be cheerfully defrayed by the Society. It is desirable that all articles should have a list accompanying them, and be in hand previously to the day of opening, that they may be appropriately arranged, and be in time for competition, as the premiums will be awarded on the first day. Every article will be returned to its contributor, or instructions left for its disposal prior to 12 o'clock, M., on the 19th.

Competition free to all persons. For list of premiums, see page 26.

The quantity of rain which fell in the 7th month, 1846, was a little more than four inches and a half.

4.00 inches.

Penn. Hospital, 8th mo. 1st.

SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.



Agricultural Implement & Seed Warehouse,

No. 194½ Market Street, Philadelphia.

For sale as above, Cultivators from \$3 50 to \$5 50 each; Cultivator Ploughs for working among corn, potatoes, roots of every kind, digging potatoes, &c., &c.; Horse Rakes; Centre-Draught Ploughs for 1, 2, 3 or 4 horses; Cutting Boxes in great variety; Corn Shellers; Grain Fans; Grain Cradles of the best make; Scythes, Snaths, Scythe stones, Rifles, Grass Hooks; improved Barrel Churns, Cheese presses, &c., &c. Garden and Flower Seeds of all kinds, for sale at wholesale and retail, by D. O. PROUTY.

March 15—16.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1846.

tf.

COATES' SEED STORE,

OF MORE THAN FORTY YEARS STANDING:

Just received the present year's crop of

TURNIP SEED,

Of the most approved varieties for cattle and table use,

WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

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July 15th.

PHILADELPHIA

AGRICULTURAL WAREHOUSE,

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 18th, 1846.

1 yr.

NEW

Horticultural and Agricultural Ware-house,

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

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The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Eighth month 15th, 1846.

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S. & J. J. ALLEN & CO.,
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Market street, Philadelphia.

October 15th, 1845.

tf.

Pondrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, for seven barrels or more, \$1 75 per barrel, containing four bushels each. Any number of barrels less than seven, \$2 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. It is found excellent for buckwheat and turnips. We are now able to supply the demand for wheat.

JOSIAH TATUM.

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THE FARMERS' CABINET,

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JOSIAH TATUM No. 50 NORTH FOURTH STREET, PHILADELPHIA.

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Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIVESTOCK.

Vol. XI.—No. 2.]

9th mo. (September) 15th, 1846.

[Whole No. 140.]

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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page

For the Farmers' Cabinet.

Prospects in Eastern Virginia for new Settlers.

TO THE EDITOR,—It is extremely gratifying to the writer, to find the subject of these essays exciting attention in many parts of this and the neighbouring States; because he is well satisfied, that if settlements are properly made in judicious locations, great good must result both to the emigrants and to the neighbourhoods where they settle.

The extent of country is so great, and the natural advantages of different parts so varied, that it is very desirable all those who are disposed to emigrate, should take time enough to make a careful and thorough examination, before they fix upon a spot to settle. I would caution all against too much haste in coming to a decision, and especially in making purchases. One of my correspondents in a recent letter tells me of some Pennsylvanians, who recently purchased a tract of land in the Southern country, "which

only a year ago sold for \$1 62 per acre. The persons I speak of paid \$2 62 for it, and were so anxious to secure it beyond contingency, that they insisted on paying the money before possession could be given. It has some water power, which has been long neglected, and it is their intention to erect a woollen manufactory, and to raise their own wool on the farm as far as they can." I am strongly opposed to a disposition to chaffer and huckster for a lower price, for any article which is offered at a reasonable rate—but think there is no need of too much haste where the supply is so abundant.

Although I have no doubt that individuals would receive the utmost kindness every where, from the natives of the State, yet I deem it a matter of the first importance to the future well being of the new settlers, that they go in sufficient numbers together to form communities of their own—so as to have their own schools, places of worship, &c., &c. It will be impossible, in my view, to accomplish much good in any other way; for even if those of the present generation are strong enough to maintain their Northern habits while they live, their children would almost inevitably,—if they have none to associate with but those whose habits have been formed there—learn to think labour too vulgar and onerous for the white skinned race: they would forget the maxim of an intelligent labourer in this cause, himself a Southern man, that "*No idle white population can flourish.*" This maxim I

consider as sound and irrefutable; but it does not apply to whites exclusively—it might be more properly and broadly stated, that “*no idle population can prosper.*”

All the intelligent Virginians with whom I had conversation on the subject, expressed a strong desire that the settlements might be made in the mode I have hinted at; their greatest concern being to introduce a total change in their habits.

As a member of the Society of Friends, I was greatly gratified at the uniform testimony of those who live in the vicinity of the old settlements of Friends, to their habits of industry, morality, &c., and the regrets expressed, that they had left the State.

Several of my correspondents in different parts of the State, express strong desires that companies of Friends would settle among them. One of them says, “nearly all the members of the former Yearly Meeting of Virginia, removed to Ohio and Indiana, to get clear of the presence of slavery; but I feel very certain that not many of them have bettered their condition in a temporal view. We may keep aloof from it here, as well as there; and no community has ever existed in Virginia who have been more highly respected than Friends. I have taken every occasion to let it be known that you are Friends, and I am certain the interest that has been felt in your movements has been much increased, instead of being diminished, by a knowledge of the fact. If you should at any time want labour, there will seldom be any difficulty in obtaining it amongst the free people of colour, of whom there are considerable numbers in many parts of the State. Some of them are industrious and respectable, though many are worthless.”*

The old Wyanoke (Wainoak) settlement, where the Yearly Meeting of Virginia was formerly held, is in a beautiful country, bordering on the James river, below Richmond; these ancient homes of Friends are now nearly all deserted—many of their houses are still standing, and the place is a desirable one for a new colony; it is but a short distance above Sandy Point, the delightful and productive plantation of Robert B. Bolling, described in my first essay in the Cabinet, an inspection of which will satisfy any one of the fertility of the soil of that region, and prove the practicability of restoring the impoverished surface at a very small cost of money and labour.

* In the vicinity of Petersburg, free coloured labourers can be had for 25 cents per day, for ordinary work; and 31 to 37½ cents, for extra work in harvest, &c.—They cut and cord wood for 31 cts. per cord.

Much excellent land may be had in considerable bodies in the immediate vicinity of Richmond; and in almost every direction around, within a few miles, enough may be had for a large settlement.

An estate in Hanover county, 20 miles north-west of Richmond, of 1700 acres, with fine and ample buildings, grist and saw-mills, and plenty of woodland, is offered for about \$10 per acre—the buildings on this land are said to have cost from \$12,000 to \$15,000. Much more land in the vicinity of this can be had at lower prices.

In Orange county, the soil of which is reckoned equal to any, a very beautiful estate, formerly owned by one of the most distinguished men our country has produced, “containing 1767 acres, nearly one half in the original growth of oak, hickory, tulip poplar, chestnut, locust, and black walnut;” with fine and ample buildings, saw-mill, and a profusion of fine fruit trees, is offered for sale on very accommodating terms; or it would be leased to suitable tenants. Other valuable and highly improved properties are offered in the same county.

In Cumberland county, which borders on the James river, some 30 or 40 miles above Richmond, much excellent land is offered for sale or rent. One correspondent offers 1127 acres with good buildings and improvements, for \$7000, on very accommodating terms of payment; or—at my suggestion—he will divide his estate into portions to suit tenants, and lease it to them on easy terms, with the provision that they may purchase within a given number of years, if they choose. He says a number of his neighbours will be willing to do the same thing.

In Rockbridge county some very fine farms are offered with spring-houses, lime-stone, mills, and abundant water-power, with good and ample buildings, for \$7 to \$12 per acre.

I think it needless to describe many more places, as it must be very evident that enough have been given to show that one can scarcely go amiss in any part of the State—all tastes and preferences may be suited—from the mountains to the ocean, almost every variety of situation is offered at prices and on terms to suit the circumstances of all.

The spirited members of the Petersburg Agricultural Society have now a committee actively engaged in procuring a list and description of the various properties for sale, or lease, within a few miles of that city. I do not believe any part of Virginia presents greater inducements to settlers than the region around Petersburg. When I receive their report, I may give the substance of it with a description of the country, and the

facilities for transportation, in all directions, both by tide-water navigation and by railroad; which with other advantages, are the basis of the opinion I have expressed above.

S. S. GRISCOM.

Moorestown, Burlington co., N. J.,
Eighth month 8th, 1846.

The Editor has felt considerable interest in the communications of his friend S. S. Griscom, and is unwilling to omit this opportunity of expressing very decidedly, that he coincides in the opinion, "that it is a matter of the first importance to the future well being of the new settlers, that they go in sufficient numbers together to form communities of their own, so as to have their own schools, places of worship," &c., &c. It will indeed be impossible to accomplish much good in any other way. It is not enough that new modes of thinking and of operating be carried into the settlement; they must be sustained there from year to year, and from generation to generation, beyond the possibility of being put down, or worked out by any surrounding errors: and this, it is obvious, can only be done by the confidence and strength, and mutual support of numbers. The new community or colony should be independent in itself—we do not mean that it should be altogether exclusive,—but it should have sufficiently within itself the elements of progress, and thus insure the diffusion more and more widely of its own beneficial influences, without the danger of being driven off the ground by the encroachment of exterior and antagonistic ones. If individual families emigrate alone, the result will almost inevitably be, that instead of turning the Virginians into Northern men, they will themselves, or their children, be changed into Virginians.—Es.

From the Farmer and Mechanic.

Comparative Merits of Charcoal and Barn-yard Manure as Fertilizers.

In the year 1768, my father purchased and removed upon the tract of land in Hanover township, Morris county, N. J. The land, owing to the bad system of cultivation then prevailing, was completely exhausted, and the buildings and fences in a state of dilapidation. The foundation of the barn was buried several feet beneath a pile of manure, the accumulation of years: little or none ever having been removed upon the lands. Even the cellar, beneath the farm-house, was half filled with the dung of sheep and other animals, which had been sheltered in it. The former occupant of the farm had abandoned it on account of its supposed sterility, and taken up the line of march for the Valley of the Miami, along with the first caravan of pioneers who accompanied Judge Symmes.

The barn, before referred to, was removed to another situation soon after its foundation was uncovered, by the removal of the manure to the exhausted fields; and its site,

owing to the new arrangements of the farm, became the centre of one of its enclosures. During the seventeen years which I afterwards remained upon the farm, the spot could easily be found by the luxuriansness of the grass, or other crops growing thereon; though the abatement in its fertility was evident and rapid. On revisiting the neighbourhood in the autumn of 1817, I carefully examined the corn crops then standing upon the spot, and was unable to discover the slightest difference in the growth or product, upon that and other parts of the field. This was about twenty-eight years after the removal of the barn.

Upon the same farm and upon soil every way inferior, were the remains of several pit-bottoms, where charcoal had been burned before the recollection of any person now in the vicinity, and most probably, judging from appearances, between the years 1760–70. These pit-bottoms were always clothed, when in pasture, with a luxuriant covering of grass, and when brought under tillage, with heavy crops of grain. Eleven years ago I pointed out these facts to the present occupant, and his observations since, coincide with my own, previously made; that they retain their fertility, very little impaired, a period probably of about seventy or eighty, certainly not less than sixty-five or seventy years.

Here then is an excellent opportunity of observing the comparative value of charcoal and barn-yard manures, as a fertilizer of lands. The former has not, after at least sixty or seventy years exposure, exhausted its powers of production, while the latter lost its influence entirely in twenty-eight years, and most probably in much less time.

I have since had many opportunities of observing the effects of charcoal left in pit-bottoms, upon vegetation, one of which only, I will relate. The last season, in the northern part of Ohio, was one of uncommon frost and drought. In May, the wheat fields, when promising a luxuriant crop, were cut off by frost;—especially in the valleys, and very much injured in the high lands—which was succeeded by the most severe drought ever experienced in the West. The moiety which escaped both these scourges, was afterwards very much injured by rust. Near the village of Canton, upon a farm on high ground, which had been mostly cleared of its timber by its conversion into charcoal, it was observed that upon the old pit-bottoms, the wheat grew very luxuriantly—was clear of rust—and had ripened plump in the berry; while in the adjacent parts of the field it was short in growth, the stem blackened with rust, and the berry light and shrivelled.

The hint has not been altogether lost upon some of the farmers in the vicinity, and some of them are preparing to make an application of charcoal upon their lands; the result of which, when fully ascertained, I shall be happy to communicate to the public, especially if the facts above stated succeed in attracting the attention of agriculturists.

LEWIS VAIL.

Speedwell, Morris Co., N. J., July 29th, 1846.

Improvement of Peat Lands.

THE improvement or redemption of peat lands, essentially concerns the farmers of the United States, as, in many parts of the country there are extensive tracts of peat land, now producing nothing valuable, which might be made eminently productive, as advantageously to the health of their vicinity as to pecuniary profit. Upon a small scale great improvements have already been made in this way, in several parts of New England, within my own knowledge, with a skill, intelligence, and success, highly honourable to those persons who have accomplished them.

One of the greatest enterprises of this kind probably ever undertaken by individual effort, was that of Lord Kames, sixty or seventy years since, at Blair Drummond, in the neighbourhood of Stirling. This was not an improvement of the peat soil, but an actual removal of it. Underlaying the peat was a bed of deep and rich alluvion. From the walls of peat, or the cuttings which appear at the sides or bounds of this improvement,—for, though an immense body was taken away, an extensive tract is still to be found,—the depth of peat removed, as it appeared to me, must have been six feet or more. It is stated to have been in some places full sixteen feet. It was necessary to obtain a command of water sufficient to carry the turf into the river Forth. A wheel twenty-eight feet in diameter, and eight feet wide, was employed to raise the water, which it did at the rate of six and a half tons per minute. The water thus raised was directed into channels cut in the moss, along the sides of which men were stationed, cutting the moss into pieces, and tumbling it into the current of water, by which it was floated into the river, and thence much of it into the sea.

This was really a vast undertaking. Whether the expenses were met by the advantages gained, I am not able to say; but a large tract of most excellent land was uncovered and brought into cultivation, and which, as I had the pleasure of witnessing,

now yields as good crops as are ordinarily grown in the country.

Enterprises of this nature must, of course, be rare, and in but few circumstances practicable; but such a work does infinite honour to the boldness which conceived, and the perseverance and labour which executed it. The interesting and extremely picturesque neighbourhood of Stirling is all classic ground, made memorable by acts of prowess and heroism in the civil wars which prevailed here, and by dreadful and bloody affrays. In looking at this magnificent improvement of Lord Kames, in comparison with these memorials of revenge and hate, of misery and murder—for aggressive war deserves no milder name—I could not help feeling how infinitely higher is the honour of subduing the earth, that it may be rendered more fruitful, and serve the purposes of life and happiness, than any of the triumphs of military glory, any of the bloody conquests of revenge and unbridled ambition. These serve no other purpose than that of scattering abroad agony and desolation; glutting the most hateful passions of a depraved nature; and marking their progress, not by the displays of genius and skill, and the brilliant and rich fruits of civilization and humanity, but by laying waste the improvements and refinements of science and art, and pouring out everywhere a turbid flood of unmitigated wretchedness and death.

In England, Ireland, and Scotland, vast amounts of peat land have been subdued and redeemed, and, from being wholly waste and unproductive, are converted into well-tilled and fruitful fields. Thousands and tens of thousands of acres have been recovered in England; and in Ireland, improvements of this nature are in progress on a most extensive scale. The single territory of Glensake, near Ballina, consisting almost wholly of peat bog, and which was to me the object of a most interesting visit, embraces about 3,500 Irish acres, or upwards of 5,600 English acres.* This, a public-spirited company, called the Waste Land Improvement Company, and possessing an ample capital, have undertaken to reclaim and cultivate, and have already made a considerable progress. There is, indeed, in Ireland, ample scope for this species of improvement, as the area of peat bog is estimated at no less than 2,833,000 acres, almost the whole of which is deemed capable of being redeemed, and brought into productive cultivation.

I know nothing in the United States resembling the bog land of Ireland and Eng-

* An Irish is to an English acre as 121 to 126.

land. Much of it, indeed, is on a level surface, but extensive tracts of bog are elevated into hills of considerable height, composed wholly of peat, and that often, as I have seen, to the depth of six, and even ten feet on the summit.

Peat, properly so called, as my readers well know, is a deposit of vegetable matter, composed, in general, of a particular kind of plants, which have decayed under water, and containing much of the element which is called *tannin*, which preserves it in the state in which it is found, often impregnated with iron, or other mineral substances, and charged with acids unfriendly to vegetation. In its natural condition, it produces only a coarse kind of herbage, distasteful and inutritious, or is covered with a short moss; in Ireland, in many cases, by heath, alike worthless for any purpose of feed. It is retentive of water like a sponge, and is very difficult of being reduced, so as to furnish a good bed for a sweet and healthy vegetation. In a wet condition, it is scarcely accessible; in a dry state, it becomes too light and hard; and though composed wholly of decayed vegetable matter, is in an inert condition, or deficient in some elements essential in order to render it productive. It is found of very different depths; in some cases only a thin stratum of decayed vegetable matter, of six inches or a foot in depth, overlaying a bed of white sand or gravel; in others, a bed of black spongy matter, of many feet, and often of unascertained depth.

Much of this land in England, Ireland, and Scotland, has been redeemed, and made highly productive. An eminent Scotch farmer, to whom I had the honour of letters of introduction, states that land which, in its natural state, was not worth more than sixpence an acre, in its improved condition is now fully equal to three pounds per acre. This refers to the annual rent or income of the land. This farmer has recovered two hundred acres of peat bog. Much of it was redeemed at a great expense, as it had been cut over for fuel, and it was deemed important to fill up the holes which had thus been left. Much of it was reclaimed at the expense of £30, or \$150, per acre; but the farmer considered himself amply remunerated by the improvement. Other lands, which gave him not more than 1s. 6d., or 37½ cents, per acre, now give him 12s. to 14s., \$3 to \$3 50 per acre, annually. A similar improvement is stated by a farmer in West Somersetshire, whose peat land, before comparatively valueless, now lets for £3 to £4 per acre. The improvements in the fen land of Lincolnshire and Cambridgeshire,

which is in many parts a species of peat land, have been followed by results equally valuable.

The extensive tracts of bog land in New Jersey, lying between the city of New York and Newark, in New Jersey, over which both the turnpike and the railroads now pass, open a field for improvements of the same kind and of the most valuable description. Partial attempts have been made already, and their success is sufficiently encouraging. But when the whole of this great extent shall be dyked against the tide, and the power of steam applied to its effectual drainage, the obtaining of a soil of the richest description, so near to some of the best markets in the country, will be likely to afford an ample compensation for any expense which may be incurred. It may be said that such improvements must be very distant in a country where immense tracts of unoccupied land of the richest description, remain to be had at very low prices; but the proximity to a great city, and to several large and thickly inhabited towns, continually increasing in population, business, and wealth, with almost unparalleled rapidity, must give a value to such lands which can scarcely be calculated, and keep far in advance of the competition of even the most fertile lands in a remote interior. Indeed, a slight inquiry will satisfy any one that the value of lands in the neighbourhood of our cities, for agricultural and horticultural purposes, in spite of all the predictions founded on the improved and unlooked-for modes of conveyance by canals and railroads, has been continually rising, and has by no means reached the zenith.

Three difficulties may be said to present themselves in the redemption and improvement of all peat lands; the first is their wetness, and draining must be the first operation to be applied to them; the second is their want of compactness, for they are often too light and spongy for the growth of plants, though this defect will be partially remedied by the draining of them; and the third is the removal of some pernicious quality, some mineral acid, which is prejudicial to the growth of the best vegetation, or the supply of some element of vegetation which is requisite in the cultivation of any other plants than that of which the mass itself is formed. Peat, though wholly a vegetable substance, and properly speaking, a compact mass of humus—in itself furnishing, under a proper form of preparation, a useful manure,—is still deficient in the elements necessary for the growth of the finer grasses, the esculent vegetables, and the

cereal grains.* What, in particular, these elements are, remains for agricultural chemistry to discover. The philosophers have approached the promised land, but have not yet got possession.—*Colman's Tour.*

Spring-tooth Horse-rake.

SEVENTEEN years ago we met with a Revolving Horse-rake which was left by some one, interested in the patent, with Mr. William Marshall, of Bowman's Point, Hallowell, who then owned and carried on an extensive farm at that place. It was the first one ever introduced into this State. We had one made, and carried it on to a farm which we then cultivated in Starks, Somerset county, and although we met with some good natured ridicule for attempting to do raking by horse power, we have had the satisfaction of seeing it come into general use. It is an admirable instrument on smooth lands, and at that time we never expected to find any thing of the rake kind that would equal it.

Last week, for the first time, we tried Dewey's Patent Spiral Spring-tooth Horse-rake, manufactured by Duncan and Paddleford, Lyman, N. H. We were determined to put it to a severe test, and we did so. We had a piece of rough land that had never been ploughed, and where the stumps were still standing, and the "cradle knolls," as they are called, all over the surface. The grass was mowed in the morning, averaging from half to three-quarters of a ton per acre. In the afternoon the Spring-tooth Rake was applied, and the ease and despatch with which all the hay was raked up, astonished not only those who did not believe it would work, but those who thought favourably of it before trial. It scraped it all up clean, excepting now and then a lock of the hay

that would be caught by some snag of a stump as the driver had to "haw" or "gee" to avoid going over them. We counted the stumps on one of the acres which we raked over, and found eighty-two of them, averaging a stump to every two square rods. It was amusing to see the iron fingers of the machine accommodating themselves to the inequalities of the surface, apparently as accurately and as faithfully as the fingers of the human hand.

On level land it will rake as clean as the other kind. We do not think it is held quite as easy as the revolvers, nor is it discharged quite so easily, but then it can be used in situations where the revolvers could be hardly moved. Next week we shall try it on a bog-meadow, and see how it will rake among the tussocks and brake roots, and will report the results.—*Maine Farmer.*

The Alpaca.

Description, Habits, Food, &c.—The Alpaca, when fully grown, is about 37 inches high to the shoulders, and 59 inches to the top of the head. It possesses many properties in common with the Llama—belongs to the same natural family, to the same country, possessing a similar disposition and manners, and bears much resemblance in figure, but is smaller in stature. Its legs are shorter, with larger muscles, and its wool finer, and more abundant; but it is less robust in its habit, being able to carry a continuous burden of only 50 to 70 pounds.

In a wild state it is never known to associate with any other animal, but keeps together in herds of 100 or more in number, feeding, through choice, on a sort of rushy grass or reed, called *ycho*, which grows in abundance on its native hills, where, it is said, these animals are never known to drink, so long as a sufficiency of green, succulent herbage, can be obtained. They resort to a particular spot to drop their dung, which greatly resembles that of the goat, the sheep, or of the giraffe, and which often proves fatal to them, from betraying their haunts. When domesticated, they possess the same gregarious habits, and are strongly attached to their birth-place, to which they return at night, evincing little or no inclination to stray away, or to mix with other flocks. They are gentle, docile, and contented in their dispositions, and are as readily restrained as the common sheep, with which, it is said, they perfectly agree. They adapt themselves to almost any soil or situation, provided the heat is not oppressive, and the air is pure. They will live and thrive on the same sorts of food as eaten by cattle and

* Professor Kane, in his instructive work on the Industrial Resources of Ireland, remarks, that "it is by the gradual formation and decomposition of this body (nitrogen), that the organic matter of the soil becomes so powerful an agent in its fertilization. The roots and fibres of a crop left in the soil, gradually rot, and become thereby the means of absorbing from the atmosphere a quantity of nitrogen, which is rendered available for the sustenance of the next generation of plants. In estimating the fertility of a soil, therefore, it is most important to determine the quantity of these organic matters, and particularly the amount of nitrogen which they contain. The mere presence of organic matter indicates nothing; thus a peaty soil may be absolutely barren, if the decomposition of its organic matter has been carried on under water, where the oxygen and nitrogen of the air have not access, and consequently only inert ulmine, destitute of the power of evolving carbonic acid and ammonia, be produced."

sheep; but the inferior kinds of browse, grass, or hay, with a due proportion of potatoes, or other succulent roots, are preferred to rich pasture and farinaceous grains. Too liberal an allowance of rich and stimulating food to an animal extremely abstemious, and habituated to live on coarse and light herbage, and that in small quantities, cannot be regarded otherwise than injurious.—*American Agriculturist*.

Smallpox in a Cow.

THE possibility of communicating any of the diseases to which man is incident, to the lower animals, would not meet with much favour from medical philosophers. However, a gentleman of close observation, who resides in Iowa, has favoured us with the following circumstances.

"The enclosed [a crust] is the scab from a yearling calf that has had the smallpox. That disease broke out in a family residing about twelve miles from Burlington, some five weeks ago. They all had it, and two of its members died. A cow and a calf were in the habit of coming round the door of the house—drank the water in which the family washed, smelt the clothes that were cast off by the sick and thrown out, and also inhaled the infection and took it. Our physicians held a consultation over them two days ago, and pronounced it to be the genuine smallpox. They were not informed of the fact until it was so late that they could hardly tell whether the scabs were primary or secondary. [The specimen is evidently of the latter kind.] There were some two hundred pustules on the calf, about the head and legs, and more on the cow. Some thirty persons were vaccinated with a scab from this source, in this town, but sufficient time has not elapsed to develop its true character."

At Rainsford Island, in Boston harbour, where cases of smallpox abounded for half a century, when not permitted to exist anywhere in the city, no way could be devised by which the matter from the most virulent form of smallpox, would show any effects whatever on cows, oxen, dogs, cats, or horses.—*Boston Medical Journal*.

Value of Employment.

WE take the following from a speech not long since made by Daniel Webster, in the Senate of the United States.—Ed.

"SIR,—I say it is *employment* that makes the people *happy*. This great truth ought never to be forgotten; it ought to be placed upon the title-page of every book on political economy intended for America, and such

countries as America. It ought to be placed in every farmer's almanac. It ought to head the columns of every farmer's magazine and mechanic's magazine. It should be proclaimed everywhere, notwithstanding what we hear of the usefulness—and I admit the high usefulness—of cheap food, notwithstanding that, the great truth should be proclaimed everywhere; should be made into a proverb, if it could, that *where there is work for the hands of men, there will be work for their teeth*. Where there is employment there will be bread; and in a country like our own, above all others, will this truth hold good; a country like ours, where, with a great deal of spirit and activity among the masses, if they can find employment, there is always great willingness for labour. If they can obtain fair compensation for their labour, they will have good houses, good clothing, good food, and the means of educating their families; and if they have good houses and good clothing, and good food, and means of educating their children from their labour, that labour will be cheerful, and they will be a contented and a happy people."

For the Farmers' Cabinet.

Ploughs and Ploughing.

Mr. Editor.—

ALTHOUGH I have no desire to resuscitate the controversy on the subject of the "Corn Breeder," yet I have thought that friend Stapler* might, perhaps, be glad to learn, that the present season affords an opportunity to set the vexed question to rest, by comparing the work performed by the Moore and Prouty ploughs, on lands almost adjoining each other, on the public road leading from Wilmington to Newcastle and Delaware city; Bryan Jackson being at this time engaged in turning under a heavy crop of clover with the *Centre-draught*, while Chauncy P. Holcomb is performing the same operation in a field in the immediate vicinity with the *Moore* plough. It is therefore only requisite for us to examine the present state of the work, and watch the progress of the growing crops to maturity, noting their comparative yield at harvest; and we shall then be able to form a correct estimate of the value of these rival ploughs in the hands of these masters in the art of husbandry.

But it must be confessed that present appearances are very dissimilar; for while the Prouty plough breaks up the furrow-slice and carries it so high and over, as that a furrow of six inches in depth, when turned will measure eleven inches deep of tho-

* See last volume of Cabinet, page 183.

roughly pulverized earth, with every vestige of vegetable matter packed into the *bottom* of the furrow, the Moore plough turns the soil close and smooth, and but little deeper in staple than before the earth was removed. So that *time*, which proves all things, will enable us to hold fast that which is the best; no one, it is presumed, wishing for more than a fair opportunity to form his judgment; and *that* he will obtain, at the hands of the best men, engaged in the performance of the best work, on their own account.

W. D.

Brandywine Hundred, Del., Aug. 31st, 1846.

Farming—Cows.

Nothing upon a farm is so valuable as a good cow. And it should be a constant effort with every true farmer to seek the best breeds and to feed in the best manner; for herein lies the soundest economy. Very much has already been accomplished for this important interest; but much remains to be done. While we are strongly inclined to believe that no better cows can be found—we mean for milk—than selections from the natives, we feel quite sure that great advantage is also to be derived from the best importations, provided the mode of keeping be imported and understood also. For here is the real secret—the feeding and keeping of the animal. And strange as it may seem, nothing is more difficult than to ascertain this.

Of the imported breeds, we have the opinion that the Ayrshires are to be preferred. They are the best stock in Scotland, and are generally regarded in the same light throughout England. They are not so large or handsome as the Durham; but they are a hardier race; keep themselves in good condition, and are easily fattened. Mr. Phinney declares them to be, from his experience, greatly superior to the Durhams, for dairy properties. There have been numerous importations of the Ayrshire breed into our State; and the last year, a large importation was made by the State Society.

To show what can be accomplished, and the manner of doing it, we refer to the famous case of the Cramp cow in England, of the Sussex breed. During her first year for milking she produced 540 lbs. of butter; the largest amount in a week was 15 lbs. In forty-seven weeks her milk amounted to 4,921 quarts. In her third year she produced 5,782 quarts of milk and 675 lbs. of butter; the largest amount of butter in a week was 18 lbs. In her fifth year, her milk was 5,369 quarts, and her butter, 594 lbs. Largest quantity of butter in a week, 17 lbs.

The feeding of this cow was, in summer, clover, lucerne, rye, grass, and carrots—at noon, four gallons of grains and two of bran mixed, in winter, hay, grain, and bran, five or six times a day.

The famous Oakes cow, owned in Danvers, in this State, may be mentioned also as very remarkable; she produced 19½ lbs. of butter in a week. In 1816 her butter was 484½ lbs. She was allowed 30 to 35 bushels of Indian meal a year; she had also potatoes and carrots at times.

A cow owned in Andover, in 1836, yielded \$67 38 from the market, besides the supply of the family. The keeping was good pasture, the swill of the house, and three pints of meal a day.

A cow owned by Thomas Hodges, in North Adams, produced in 1840, 425 lbs. of butter. Her feed was one quart of rye meal and half a peck of potatoes daily, besides very good pasturing.

Putnam cow, at Salem, averaged for a year 12 quarts daily. In 1841, with two quarts of meal daily, she averaged in one month 18 quarts daily.

A cow owned by S. Henshaw, formerly of Chicopee Falls, gave 17½ lbs. of butter a week, and in one case 21 lbs. This was a native without any mixture.

A cow in West Springfield is recorded as having given in sixty days 2,692½ lbs. of milk, which is equal to 22½ quarts daily.

A cow owned by O. B. Morris, of Springfield, some weeks afforded 14 lbs. of butter, besides milk and cream for family. Her feed in winter was good hay, and from two to four quarts of rye bran at noon; in summer, besides pasture, four quarts of rye bran at night. Judge remarks, in the account of his cows, that "many cows, which have been considered as quite ordinary, might by kind and regular treatment, good and regular feeding, and proper care in milking, rank among the first rate."

J. P. Cushing, of Waterton, has several native cows, which give 20 quarts a day.

Dr. Shurtleff, of Chelsea, owned a small cow which gave 21 quarts daily. The Hobart Clark cow, at Andover, gave 14 lbs. of butter a week.

A cow of W. Chase, Somerset, R. I., in 1831, gave most of the season 20 quarts of milk daily; averaged nearly 14 lbs. of butter during the season. The Hosmer cow, at Bedford, Mass., gave 14 lbs. of butter a week.

The foregoing list consists of natives. We may also add, that there is now in West Springfield a cow owned by an excellent farmer, which has afforded 19½ lbs. of butter a week. But we are not informed whether

this is an unmixed native or not. In the account which is on record of the famous Cramp cow in England, a remark is made deserving the notice of all milkers and farmers—"Milch cows are often spoiled for want of patience at the latter end of milking them."

The question has often been asked—what is the average produce of a cow in milk? An experienced milk man in Essex county, says it is five beer quarts daily, when well fed; others say one gallon. It is said a cow requires two tons of hay in the season—and should have from one to two quarts of meal a day, and about a peck of vegetables. Soiling is well adapted for the cow; grass, oats, and corn, cut green, furnish excellent food for this purpose. Carrots are invaluable through the winter.

Our farmers would render a great service by furnishing at our annual fairs, written statements of their own experience in the management and produce of their cows. May they not be fairly called upon to do so?—*Springfield Republican.*

Work in Ireland.

In Ireland, on the river Foyle, below Londonderry, where it widens into a lake, a great work is going on in redeeming a large extent of land from the sea. At the recession of the tide, an extensive surface is left exposed. The plan is simply to enclose the land by a strong stone wall, or embankment, which will effectually exclude the sea. The work is as yet in embryo, though a large extent of wall is visible. I was told it would include full 2,500 acres; but the source of my information was more casual than authentic. After it is once securely enclosed and brought into cultivation, it appeared to me there would be no difficulty in irrigating at least a considerable portion of it, by water from the neighbouring hills. I do not know that this is a part of the plan.

The example is one of bold enterprise, and is undertaken by one of the city companies in London, who have large funds at their disposal. I refer to it, hoping to induce my readers to reflect for a moment upon the essential difference, in the investment of capital, between that which is accumulative and productive, and that which is unproductive and deteriorating. If a man spends one hundred thousand dollars in the erection and adornment of a house far beyond his needs, the capital invested makes no return; the house is liable to continued wear and decay; and a large expenditure is required, not only to live in keeping with the establishment, but to keep up the estab-

lishment; and if some allowance is to be made for the pleasure enjoyed in this display of the owner's vanity and gratification of his pride, it must be regarded as a pleasure not of a high character, and almost purely selfish. On the other hand, capital expended in the redemption of land from the sea, or in the improvement of waste lands, becomes at once recuperative; the crops soon give a greater or less return; production quickens and increases production; power in this case, as in many others, grows by the action of its own energies; useful labour is called out; human food is increased, and human comfort is provided for. The eye of the observing traveller rests with grateful delight upon these beneficent triumphs of human art and industry. The performers of such good, and oftentimes grand works, in the works themselves, erect to their own honour monuments far more glorious, in the estimation of true philosophy, than equestrian statues, or marble mausoleums, or even the mighty pyramids of Cairo—the altars where human toil and life were recklessly and criminally sacrificed to despotic pride, and to an ambition of renown which has no place among those virtues which truly adorn and elevate our nature; a desire of a vain immortality, which, in this case, seems to have met with a remarkable moral retribution, in that even the names of the founders of these wonderful erections remain beyond the deciphering powers of human skill.—*Colman's Tour.*

For the Farmers' Cabinet.

Independence of the Farmer.

TO THE EDITOR,—It has always been a source of gratification to me, when I enter a farmer's residence, to see lying upon the table or on the shelves of his library, one or more of our valuable agricultural periodicals. It follows as an almost invariable rule that *that* man—if he but carefully reads them and fully appreciates the value of their contents—is, or soon becomes an intelligent and thrifty farmer—realizing with pleasure, the fruits of his industry and enterprise. He is aroused to a sense of his own interest, and will not be found turning a deaf ear to the friendly admonitions or instructions of an enlightened member of his fraternity, saying—he does not need the knowledge or experience of this man, or of that, to assist him in conducting his agricultural affairs; his knowledge is sufficient for him; and that he will not be humbugged with the result of the experience of others, through the medium of agricultural papers,

and thus made a "book farmer" of, &c.,—but stands ready to receive any information that may be of advantage to him, and to communicate to his fellow labourers the results of his own experiments.

Therefore, I would advise every gentle reader, not to settle down under the erroneous impression, that he is too *old* to receive anything *new*—that he can conduct his own agricultural affairs to the *best* advantage without any information, further than that derived from his own labours. I believe it is not always best to pursue the *same old course*, undeviatingly, year after year, without any regard for the experience of others. Agriculture has not yet been brought to such a state of perfection as not to be susceptible of great improvements: therefore let every one be on the alert, doing all in his power towards the advancement of his honourable and dignified calling. I call it honourable and dignified, because such is certainly the case. What occupation is there to be found more honourable or more independent than that of the farmer—the proprietor of the soil of an enlightened nation—he who earns his own bread by the sweat of his brow? The question needs no answer—it is self-evident.

D. H.

Trenton, N. J.

We are not disposed to branch off into a broad lecture on political economy, or to meddle much with the vexed questions connected with it; but the last sentence or two of our correspondent, above, reminds us of what we have long believed to be the fact, viz: that we are not accustomed to view the farmer's independence of other occupations in quite so strong a light as the case will justify. Who, indeed, so independent as he? Do not all manufactures and trade of every kind, depend entirely upon the labours of the farmer? or perhaps more properly, upon the surplus produce of his labours? If we take an isolated community of farmers, and suppose their labours to produce from the earth no more than sufficient to satisfy their own wants, where can the manufacturer and the merchant operate? The surplus of the earth beyond the wants of the producer, is what feeds all others: the farmer must first be fed, before he will purchase of others, and feed them. Let him keep out of debt, and though he may not get rich, he can scarcely help living, in spite of tariffs and monopolies. Yet, such is the beautiful connection of one calling with another, that the farmer cannot be prosperous and flourishing, while manufacturers and traders are depressed, for these purchase his surplus produce—neither can these latter long subsist, if the short crops of the farmer give him nothing to spare, with which to purchase their wares. If short crops yield no more than barely to feed the producer, how can the city subsist?—Ed.

SALT or brine, is good for the *Plum tree*, *Asparagus*, and *Onions*.

Lolium Perenne—Rye-Grass.

ENQUIRERS have sometimes been made of us, respecting the Rye-grass, which is to be met with occasionally in our grass plots, and in our fields. The following is taken from Parnell's Grasses of Scotland, and may be valuable to some of our readers.—Ed.

Specific Characters.—Florets not awned. Glume shorter than the spikelet.

Description.—It grows from fifteen inches to two feet high. The root is perennial, fibrous. *Stem* erect, round, smooth, and finely striated, bearing six or seven leaves with smooth striated sheaths; the upper sheath longer than its leaf, crowned with a short obtuse ligule; the lower sheaths shorter than their leaves. *Joints* four or five, smooth, often purplish, the first and second rather remote. *Leaves* dark green, lanceolate, acute, flat, smooth on the outer surface, and roughish on the inner. *Inflorescence* spiked. *Spike* compressed, erect or slightly curved, about one-third the length of the stem; rachis smooth. *Spikelets* sessile, arranged on the rachis alternately in two rows; of six to twelve *awnless* florets. *Calyx* of one glume of an oblong-lanceolate form, smooth, and five-ribbed; situated on the outer side, and shorter than the spikelet. *Florets* of two paleæ, the outer palea of lowermost floret shorter than the glume, smooth, five-ribbed, membranous, and entire at the summit. *Inner palea* linear-lanceolate, equal in length to the outer palea, with two green marginal ribs delicately fringed. *Filaments* slender, shorter than the palea. *Anthers* cloven at each end. *Germen* obtuse. *Styles* very short. *Stigmas* feathery along the upper side. *Seed* elliptic-oblong, channeled in front.

Of *Lolium perenne* there are a great number of varieties known to farmers by various appellations; all more or less valuable for agricultural purposes, viz: *Slender rye-grass*, *Broad spiked rye-grass*, *Pacey's rye-grass*, *Russell's grass*, *Whitworth's grass*, *Stickney's grass*, *Panicled rye-grass*, *Double-flowered-rye-grass*, *Viviparous rye-grass*, besides a great number of others, amounting to at least seventy varieties. Mr. Sinclair states, that there has been much difference of opinion respecting the merits and comparative value of rye-grass. It produces an abundance of seed, which is easily collected, and readily vegetates on most kinds of soils, under circumstances of different management. It soon arrives at perfection, and produces in its first years of growth a good supply of early herbage, which is much liked by cattle: but the after-crop of rye-grass is very inconsider-

able, and the plant impoverishes the soil in a high degree, if the culms, which are invariably left untouched by cattle, are not cut before the seed advances towards perfection. When this is neglected, the field after midsummer exhibits only a brown surface of withered straws.

For permanent pasture, the produce and nutritive powers of the rye-grass, compared with those of the cock's-foot grass, (*Dactylis glomerata*) are inferior nearly in the proportion of five to eighteen; and inferior to the meadow fox-tail (*Alopecurus pratensis*) in the proportion of five to twelve; and inferior to the meadow fescue (*Bucetum pratense*) as five to seventeen. The rye-grass is but a short-lived plant, seldom continuing more than six years in possession of the soil, but is continued by its property of ripening an abundance of seed, which is but little molested by birds, and suffered to fall and vegetate among the root-leaves of the permanent pasture-grasses. It is only within these last forty or fifty years that other species of grasses have been tried as a substitute for the rye-grass in forming artificial pastures, it having been the favourite grass with most farmers from the time of its first cultivation in 1674 to the present period.

The rye-grass, when not more than three years old, flowers in the second week of June, and ripens its seed in about twenty-five days after: as the plants become older they flower much later, sometimes so late as the beginning of August. It is a very common grass throughout the whole of Britain; also a native of Lapland, Norway, Sweden, Germany, France, Spain, Portugal, Switzerland, Italy, Russia, North of Africa, and West of Asia. It occurs also in the United States, but it is stated to have been introduced from Europe. Its limit of altitude seems to be about 1000 feet above the sea.

Lolium temulentum—the Darnel—differs from *Lolium perenne*, in the glume being longer than the spikelet, and the outer palea furnished with a delicate awn;—whereas in *L. perenne*, the glume is shorter than the spikelet, and the florets have no awn.

ITALIAN MODE OF COOKING MAIZE.—

While journeying in Italy some years ago, I was delighted with the admirable mode in which the *polenta* or Indian meal is prepared in that country. I think, with a recent correspondent to the London Gardener's Chronicle, that the only fault of the Italian method is, that one is apt to eat too much, as he says, "I am ashamed to say it has been my case at the Hotel de la Couronne, at

Brides, near Montiers. The landlord is renowned for his culinary skill; but could he only make, or had he never made any other dish than *Timballe de Polenta a la Savoyarde*, that alone should render him famous."

"Take Polenta (Indian meal) perfectly dry and fresh, moistened with boiling water, and perfectly mixed by stirring with a wooden spoon until the mass is reduced to a thoroughly smooth paste, of consistence to admit boiling. Keep it just below a boiling temperature until, by tasting, you find it to be perfectly homogeneous; about ten minutes suffice; stir the whole time. Remove it from the fire, and add as much fresh butter, strong brown gravy, grated Parmesan cheese, and as much garlic as suits your palate; grated ham is an excellent adjunct. Simmer ten minutes, stirring the whole time; pour or turn the mass into a well-buttered mould; serve with brown gravy.

I defy the world to produce the equal of this as a farinaceous dish.—*South. Planter.*

ALTHA ROSEA.—The Hollyhock, says *Maund's Botanic Garden*, for several years past, has had much to complain of, from the undue neglect with which it has been treated. Here and there it has found a discerning patron; but, generally speaking, the floral world has been influenced by a Dahlia excitement, from which it is now subsiding, in sober disposition to judge all flowers by their respective merits. The Rose is again the queen, and the Hollyhock is again at court. As society has changed, so have flowers, and the Hollyhock has now to frame its costume to the fashion of the times.

GOOD NATURE.—One cannot imagine any quality of the human mind whence greater advantages can arise to society than good nature, seeing that man is a sociable being, not made for solitude, but conversation. Good nature not only lessens the sorrows of life, but increases its comforts. It is more agreeable than beauty, or even wit. It gives a pleasing expression to the countenance, and induces a multitude of the most amiable observations. Were it not for good nature, men could not exist together, nor hold intercourse with one another. For this reason, men invented that species of artificial urbanity called good breeding, which is nothing more than an imitation of good nature; for what is it but the reducing into a system of affability, complaisance, and easiness of temper! Good nature is an aptitude of the mind on which objects act in an inexplicable way, and which discovers itself in universal benevolence to the whole creation.

From the Cultivator.

Disease in Horses.

ACCORDING to promise, I proceed to give a description of a disease that many horses were troubled with the past winter in this and the adjoining counties. As a general thing, it did not prove fatal, but produced abortion in mares in every case of which I have had any knowledge. I shall give the particulars of those cases only that occurred in my own stable, seven in number, five being mares in foal by a fine English blood horse.

Symptoms.—Stiffness in all the legs, moving only with difficulty; running of the eyes, with an inclination to keep them closed, and but little appetite; one, and sometimes both hindlegs swollen and quite sore to the touch of the hand, with a rapid falling off in flesh.

These symptoms continued four or five days, when the animals would again resume their former condition. Three of the above mentioned mares worked steadily in the team; two of these did not lose their foals until four weeks or so after their recovery, when they had regained their flesh and spirits. The last of the three, lost hers immediately after beginning to recover; the other two in foal were driven occasionally. One of these lost hers like the last of the three above mentioned; the other kept hers two or three weeks. One young mare, driven part of the time, but which was not with foal, exhibited symptoms like the others. The seventh and last, a colt, two years old past, lay upon his side nearly the whole of the time, four or five days. He occupied a stable where there were three other colts and a mare with foal, none of which were affected. I thought it was evident that they took it from each other, and were taken about two weeks after being exposed; but the case of the colt in the second stable would not warrant that conclusion. I also purchased a working mare about that time, and put her in the first stable, where the six first mentioned cases occurred, and she was not affected; she being the only one in that stable that escaped. These cases occurred from first of Second month to the first of Fourth month.

The horse spoken of, by which these mares were with foal, was purchased late last season by myself and one of my neighbours. He died suddenly last First month, while I was a few days from home. He was driven one or two miles in the evening, seemed very lively and playful, and was put in his stable about nine at night. When

first seen in the morning, he was rolling, tumbling, and pawing, frothing at the mouth, sweating, &c., and died in one or two hours. He had always appeared well and hearty since he came into our possession. At the time he was taken, he was thought to be healthy and gaining in flesh. I am told by those present, that a part of the contents of the stomach were found to have exuded through the maw, which organ looked more like a sieve or network of thread than any thing else. I cannot think he was killed by worms, because they were unable to find any, except a very few bots, which I think could not have so wholly destroyed the maw in so short a time; and if they had been long at work, the horse must have shown some symptoms of distress.

I have tried to be as particular as possible in describing all the above cases, that those having any knowledge of such things may be able to suggest the causes.

I want to ask of the contributors to your columns more attention to the interests of the horse; more information in regard to the best breeds, and directions in breeding and rearing them, that we may learn to raise less worthless nags, and lose less valuable ones. We have enough to risk in raising horses, to warrant our taking time and trouble in learning to avoid as many mishaps as possible, and have the best animal when reared. One way we sometimes miss of having a valuable horse, for sale or use, I consider altogether needless; I mean a miss in training or breaking. Although there are various dispositions among horses as among men, yet if we deal justly with the colt, while in training, the horse will most certainly do us justice in turn.

JOHN KESSE.

Peru, Seventh month, 13th, 1846.

For the Farmer's Cabinet.

WATER PROOF RECIPE.—Either for boots or other leather: One pint Tanners' oil, half pound tallow, a lump of rosin size of a shellbark, Burgundy pitch size of an egg, beeswax size of an egg, lampblack three cents worth, all mixed together, and gradually melted over a slow fire. When to be applied, the mixture should be made about milk warm, and put on with a sponge. The leather to be made a little damp, but not wet. M.

LIGHTNING-RODS cannot be relied upon unless they reach the earth where it is wet, even in times of the severest drought. Do not stop till you reach this point of moisture.

Winter Pears.

In answer to the query, "which he considers the best five varieties of winter pears?" M. P. Wilder, the President of the Massachusetts Horticultural Society, names as "the result of many years experience," the *Beurré d'Arenberg*, the *Winter Nelis*, the *Columbia*, the *Glout Morceau*, and the *Passe Colmar*. The first of these he considers the "prince of pears." We take the following descriptions of these fine varieties from *Downing's Horticulturist*. This opportunity is embraced to remind our farmers in this vicinity, that Philadelphia is very scantily supplied with winter pears. Indeed, it is scantily supplied with pears of any kind. They always, therefore, command a high price, and are well worth the attention of the enterprising farmer.—Ed.

1. *Beurré d'Arenberg*.—This variety has, for the last ten years, never failed to yield me an abundant crop of its delicious fruit. It has often been exhibited at the rooms of the Massachusetts Horticultural Society, always receiving the unqualified approbation of our most experienced amateurs and cultivators. Possessing all the characteristics of a first rate table pear, it retains at maturity its flavour and *champagne* sprightliness, with all the freshness of a specimen just plucked from the tree. The foliage and fruit adhere with a remarkable tenacity, resisting the frosts and gales of autumn better than those of most other varieties. As a constant, prolific, hardy sort, the *d'Arenberg* is unsurpassed, and whether on the pear or quince stock, proves admirably adapted to this climate. It keeps as well as a *Russet* apple, and requires no further care than to gather in a dry day, and pack at once from the air, in close boxes or barrels—with no other precaution, it has been found in a state of perfect preservation in the month of January. Season, December to February. The *Beurré d'Arenberg* is a fruit easily excited to maturity, and may be brought into eating in November, or retarded until March.

2. *Winter Nelis*.—This is classed second in my list, not from any inferiority to the first named variety; for in fact, as a sweet, melting winter pear, it has no equal. Connoisseurs generally prefer the brisk, vinous juice of the *d'Arenberg*, but some of our good judges esteem the *Nelis* above all others of the season.

The growth of the tree is not strong, but more so on the quince, to which it seems well adapted; it is hardy and thrifty in rich soils, otherwise the shoots are more stunted and feeble than is usual with most other sorts. To obtain specimens above medium size, requires high cultivation and some thinning of the fruit. Keeps and ripens

well, and bears good crops. Season, November to January.

3. *Columbia*.—This excellent native variety has proved with me a fruit more uniformly smooth, perfect in shape, and free from the depredations of insects, than almost any other sort. The tree is thrifty and hardy, not prolific when young, but a great bearer on mature subjects, the fruit being regularly distributed over the branches, and of very uniform size. I was so much pleased with this variety when it first came to my notice, that I despatched a special messenger from the city of New York to the owner of the original tree in Westchester county, for half a bushel of the pears; and I did not regret the expense of twelve and a half dollars, when I consider the acquisition of such a fine American variety. My *Beurré Diels* were then in eating, and I judged the *Columbia* of equal quality; since which, however, I have seldom seen it so good. Ripens about the first of January; of a clear lemon yellow, very handsome, and may be kept two or three weeks in this state. Its beauty will give it a ready sale, and its quality and its merits, on the whole, if not as high as our first impression, will prove perfectly satisfactory.

4. *Glout Morceau*.—This pear, under the name of *Beurré d'Arenberg*, is more universally cultivated in France as a winter fruit, than any other variety. It is truly an excellent, rich, sugary pear, and is not unworthy of the appellation given it. The tree is hardy, a great and constant bearer; but it requires, like most pears, good cultivation. Few varieties succeed so well on the quince as the *Glout Morceau*; a tree of which, in my own ground, annually produces a barrel of large perfect fruit; this is clear waxy yellow, and very handsome at maturity; keeps into the winter months, with ordinary care; commands as good a price in the market, and is esteemed by many equal to the *Beurré d'Arenberg*. It varies much in form. In growth, it is more luxuriant on the quince; the large specimens frequently having a very thick, short stem, set angularly on the fruit, with the peculiar knobby appearance of the *d'Arenberg*. On the pear stock and under medium cultivation, the stem is smooth and straight, as figured by Thompson in the *Gardener's Chronicle*, and Downing in the *Fruits and Fruit Trees of America*. From this circumstance the present subject has been confounded with the *Beurré d'Arenberg*. Season, December and January.

5. *Passe Colmar*.—As a hardy, vigorous, excellent pear, the *Passe Colmar* has few superiors. It is prolific to a fault, and re-

quires judicious management. To insure fruit corresponding to its character, in the Catalogue of the London Horticultural Society, "first size, and first quality," it is necessary to commence the trimming process as early in the season as the best specimens can be distinguished, or the pruning out of half the fruit bearing spurs in the month of March, as recommended by the late Mr. Manning, will contribute to relieve the tree of its overbearing propensity. The French make two varieties of this pear, viz: *Passe Colmar gris*, and *Passe Colmar doré*. I have never discovered any difference in the fruit of these trees, that only which is exposed to the sun, having the golden colour alluded to, the beauty of which is sometimes with us further enhanced by a red cheek.

This tree makes long weeping branches, and frequently sets a second crop of fruit, which should always be removed.

Ripens gradually from November to February, but may be kept later; large and beautiful specimens having been received by me from New-Bedford, as the *Colmar d' Hiver*, on the 18th day of March.

Without the adoption of the system of culture here recommended, this variety will generally prove unsatisfactory.

An inquiry will no doubt arise in the minds of some of your readers, why the *Easter Beurré* has not found a place in the above list. My answer is, that although we obtain some specimens of first rate excellence, yet this variety has generally proved so variable and uncertain that it cannot from our experience at present, be recommended for general dissemination. It however succeeds better on the quince.

Respectfully yours,

MARSHALL P. WILDER.

Boston, June 1st, 1846.

For the Farmers' Cabinet.

The Potatoe.

MR. EDITOR,—Various as have been the opinions in regard to the blight in the potatoe, I have been unable to find any thing that has been said in reference to the *cause* of the disease, that meets the views I have long since taken, which affirm it to be caused by the atmosphere. For the last two years I have made examinations, and found that the sap which circulates freely through minute ramifications of the whole vegetable, contains charcoal, hydrogen and oxygen, and they embrace all the alkalies the vegetable derives from the earth. So long as the tissue of the plant remains unobstructed, the potatoes will be healthy and sound; but

when the vessels that percolate the sap through the whole organization of the plant become diseased, they suspend operations, and the stalk turns yellow and dies.

Now, in my researches I have found this to be the case. A large majority of farmers plant their potatoes upon barn-yard manure that has not been properly prepared. The manure contains ammonia which escapes from the hill, and in coming in contact with the heated atmosphere, forms miasmatic particles, extremely poisonous in their nature, and they settle down upon the stalks and leaves of the plant. The moment these particles fall upon the stalks, the sap vessels become paralyzed, and the respiratory organs are impregnated with a fetid substance. In a short time these effluvia mingle with the secretions of the plant, and not until then, does the plant undergo any decomposition whatever.

In the potatoe these vessels are more easily affected, and consequently a smaller portion of poison will accomplish the work of death. The stalk being diseased, the sap ascends to the poisoned part, receives a portion of it, returns with it to the healthy part of the plant, and thus distributes the poison to the tubers, and the whole vegetable becomes a worthless thing.

Now the remedy is this: When a farmer sees his potatoe tops thus withering, he should lose no time in mowing them off below the blight, and by this means he will save his crop. The experiment has been effectually tested.

Yours, &c., D. W. BELISLE.

Honesdale, August 7th, 1846.

THE ORANGE TREE.—Any accident to the Orange tree, would be regarded in Florida as a serious calamity. In 1835, more than ten years ago, they were entirely destroyed throughout the State, as well as some of the most hardy frost trees, by a few days of intense cold after a few weeks of warm and wet weather. The loss which our citizens then sustained is just beginning to be replaced. Extensive groves of this beautiful tree abound throughout the State, and within the last two years they have reached maturity, and generally bear their fruit in abundance. The yield of the orange trees in this section was of more value the last season, than it has been for a number of years. The fruit itself was much larger and of a better quality, and much more abundant, owing to the full maturity of the tree. We look forward to the day when this delicious fruit will be a large item in the exports of the State.—*Tallahassee Journal*.

For the Farmers' Cabinet.

Stone Coal—Agriculture.

MR. EDITOR,—There are few who are aware of the effect which the burning of stone coal has upon agriculture. The connection between the two, is one of vast importance. The use of stone coal is destined to cause a great change in the system of agriculture. Perhaps you are surprised at my stating this, but I will attempt to make the matter clear to you. You are aware that the principal food of all vegetables is carbonic acid gas, and that for the purpose of supplying their vegetables with this gas, farmers put themselves to a great deal of trouble, inconvenience, and expense, to accumulate, preserve, and apply their manures—the decay of these manures furnishing the gas. You are also aware that stone coal is composed principally of carbon, which, in the process of burning, enters into chemical combination with the oxygen of the atmosphere, forming carbonic acid gas. From the consumption of stone coal by our factories, furnaces, rolling-mills, machine-shops, steamboats, &c., we have an extremely large addition to the supply of carbonic acid. This carbonic acid has, until very recently, been locked up in the bowels of the earth, and is now being added to our former supply; for the wood which has heretofore been used for many of the purposes for which coal is now substituted, goes on still to decay, and thus supply its own quota of carbonic acid. Hence, I say, that the carbonic acid which is now supplied by the stone coal, is additional to the supply we have formerly had. Now this additional supply cannot remain in the atmosphere, nor can it remain in the form of carbonic acid, for the vegetation will absorb it, and if the other circumstances be favourable, the result will be an increase in the size of the vegetable. This is the result so ardently desired by the farmer, and for which he applies his manure, his time, his labour, his money, and his talents. The extensive and rapidly extending consumption of stone coal, is therefore destined to relieve the farmer from much of his labour and trouble in the procuring and applying of manures, when his object is to furnish his plants with carbonic acid.

But the benefits do not stop here. His plants also need nitrogen, an element which they derive from ammonia. This ammonia is often of the nature of an alkali—so much so as to be called a volatile alkali. It is a very precious substance, and is much needed in the culture of grain. It is therefore very valuable, and much care is required for its preservation and use. The sulphur of stone

coal in connection with oxygen, forms, during the process of burning the coal, sulphuric acid. This acid will readily enter into chemical combination with ammonia, and *fixes* it, so that it loses its volatility. The sulphuric acid is deposited on the grain, grass, and fruit trees of the farmer, along with the carbonic acid. The sulphuric acid not being needed in any large quantity by the plant, is thrown off by its roots in the form of excrement, and remains in the ground. In times of rain and snow, the volatile alkali,—ammonia,—which has been condensed in large quantities by the water of the rain, is thrown to the earth, and as the water sinks into the ground it carries the ammonia with it; and if nothing prevents, when the water evaporates the ammonia again becomes gaseous, and escapes to the atmosphere. But if an acid be in the soil, it will enter into chemical combination with this ammonia, and retain it until some power sufficiently strong to break the force of the chemical attraction, being brought to bear upon it, succeeds in wresting the ammonia from its grasp. When this acid is the sulphuric acid, the compound is called sulphate of ammonia. This sulphuric acid which has been expelled by the plant is close at hand, and if the plant cannot absorb and assimilate all the nitrogen contained in the ammonia supplied by the rain, the sulphuric acid retains it; and when the plant is prepared for the remainder of the ammonia, the roots absorb the sulphate of ammonia, and the plant possesses the power of destroying the chemical affinity, and after assimilating the nitrogen contained in the ammonia, expelling the sulphuric acid as before, only to perform its office over again.

Thus we see the consumer of stone coal benefits, and will continue to benefit—and that too, to an enormous extent—the agriculturist. The increasing consumption of stone coal, induces me to think that the time is not far distant when the farmer will have to desist from hauling manures upon his fields—this part of his labour being superseded by the supply of gases furnished by the atmosphere. This will be effecting a great change in the system of agriculture, for much of the labour and capital of the farmer are devoted to the procuring and applying of his manures. Relieved from this hard and disagreeable task, his business will be more profitable and far more attractive than it has been heretofore, and prosperity and happiness crown the board from which they have too long been absent.

But we must turn from so agreeable a view of this matter, for the reality of the case requires it. Would that the happiness

of man were unalloyed with misery—but in this case as in all others, there is a dark as well as a bright side of the picture. It is my province to show this up as well as the other.

I am induced to believe that much mischief is caused by the increase of carbonic acid, caused by the consumption of stone coal. There can be no doubt that it vitiates the air, and renders it less fit for respiration, resulting in weak constitutions, and perhaps in a great loss of health. But its ill effects do not stop here. The excessive supplies of this material to the vegetable creation, cause plethora and other diseases in plants, when those plants are not prepared for its reception. The carbonic acid possesses infectious properties, which have a tendency, when nothing prevents, to cause the plant to decay, and this brings on disease and death. This decay in this, as in all carboniferous substances, commences with the saccharine fermentation, which produces a sweet substance—this sweet substance attracts insects, which bore into the plants, destroying their organism, and hastening that death which is rapidly approaching; or assisting to produce it, when the vital power of the plant would perhaps be sufficient to prevent it, if it had nothing but the carbonic acid to resist; but when suffering from both causes combined, is unable to withstand the shock. As this decay progresses, if it be much accelerated, putrefaction takes place, producing a substance which is the favourite food of the fungi. The seeds of these fungi being present wherever vegetation is, take root and grow; and thus, by depriving the plant of a part of its nourishment, and by destroying its organism, hasten that death which would otherwise require more time. We may see this effect produced all around us at this early day, and it is yearly growing worse and worse; and unless it is stopped or checked, the effect will, in a few years, be disastrous. It is this cause which is year after year destroying our potatoe crops. It is this that rusts and smuts our wheat—that ergots and blights our rye—that mildews buckwheat—induces the insects to attack our fruit trees—causes the mildew to attack our grapes, and destroys the hopes of many who have laboured for years in planting and rearing orchards and graperies. It is this that causes fruit trees to drop their fruit before it ripens—it effects this in part by making the sap sweet and inviting the presence of insects, and partly by diseasing the tree. It is this that causes the fruit to shrivel up and not attain half its size, and in this and in other ways lessens the produce of the tree. It also causes timber to be predisposed to

rot, and thus decreases its utility. It is felt most severely, however, at the present time, in its effects on the potatoe crop. Thousands upon thousands of bushels of this valuable esculent have been thus lost every year; and, if I am not much mistaken, the loss will be unusually severe this season. This is truly a deplorable picture, and one which, if accompanied by no ameliorating circumstances, would be of a painful nature. If there were no way of avoiding these results than that of preventing the mining and using of stone coal, the extremely bad results would justify even this severe measure. But thanks to the noble science of agricultural chemistry, we are so placed that, so far from this powerful agent doing us harm, we may so direct it that it may do good, and good only. By the judicious use of alkaline substances, &c., the vegetable creation may be so assisted as to be able to assimilate all of this carbonic acid, and thus fix it in such manner that it will be powerless to do ill, and all the good that it can do will be secured to the animal creation. By the use of lime, ashes, salt, and other alkaline substances, plants will be able to absorb all the carbonic acid; and in such manner that disease may be prevented, and the attacks of insects and fungi be warded off. By placing pulverized charcoal in the soil, the carbonic acid and ammonia which is conveyed to the earth by rain, snow, &c., will be absorbed by it, and thus be prevented from being absorbed by the plant to its injury. This charcoal will hold the carbonic acid and ammonia until the plant can use it, when the plant by its roots can extract it from the charcoal, and leave the charcoal to absorb a fresh supply, whenever that supply is more abundant than suffices the plant at the time of the deposit of the carbonic acid and ammonia. Charcoal possesses the power, to an eminent degree, of absorbing these substances, as you will perceive by reading my communication on that subject, as contained in the Cabinet of January last. To agricultural chemistry, then, is due the credit of saving us from an event that would otherwise overwhelm us, but which may now prove of incalculable good.

Yours, &c.,

CHEMICO.

Wilkesbarre, July 28th, 1846.

In pruning shrubs, vines, &c., special observance should be paid to neatness. Always cut near a bud, for whatever remains beyond, is certain to die, and has ever an unsightly appearance.

To Preserve Rose Bushes.

THE Horticulturist takes the following from Professor Lindley's *Gardeners' Chronicle* of the Seventh month last. It may prove useful to the lover of flowers.—Ed.

WHAT is a Parapetticoat? We are astonished at the numerous inquiries that have reached us about this article. Its name reveals its nature. It is a hybrid between a parasol and a petticoat. This is not banter but fact. And why should there not be such a thing? What is there in *rerum natura* to prevent an ingenious person from applying those two needful articles of shelter and dress to gardening purposes? They will fade, and wear thin, in the custody of the most economical gentlewoman, and to find a use for them afterwards is an adaptation of means to end which cannot be too highly commended.

Let us give a receipt for making a Parapetticoat. First find a good sized parasol, or small umbrella, covered with cotton, and not rubbed into holes. Then select a cast-off petticoat, not a crinoline, which Mrs. Malaprop calls a Kremelin, nor yet a flannel, but some other form of the vestment; it need not be very full; indeed, it will be better for being scanty; sow up the opening, and it is ready for attachment to the parasol. For this purpose the latter instrument must be opened, and kept so; then the upper end of the petticoat is to be sowed to the edge of the parasol, and a staff six feet or more long is to be secured to its handle. Thus the parapetticoat is constructed.

But what a word! cries Sir Erasmus Verbal. What a barbarous compound of Greek and Saxon! The thing may be well enough, but its name is unendurable. Pray call it a parachiton, or a parachitoniek. We can have no objection to the change, if the world prefers it; and we agree with Sir Erasmus, that it will be as well to adopt it when parasol is called parabellion, and parapluie a paraombrion—but not till then.

And what is the Parapetticoat for? For, Madam! for a most important purpose. It is an instrument of execution; it is the shirt of Nessus; it is the robe of Atropos. It is to enable the gardener to dispatch his mortal enemies. It is to relieve his rose bushes from that foe which he assails in vain with snuff, gas water, and smelling salts. It is to kill the green-fly, (*Aphis*.)

The instrument is used thus. In the first place the petticoat is drawn up till it rests upon the outside of the parasol. The staff of the latter is then introduced perpendicularly into the centre of a rose bush, and secured in its place by being pushed into the

ground. The petticoat being then drawn down, the bush is completely covered in by the garment.

—*riget horrida tergo*
Palla

The gardener then blows his tobacco smoke beneath it: in a few minutes the rose bush is enveloped in a cloud which has no outlet; the green-fly seeks in vain to escape from the fatal atmosphere which enters every fold and lurking-place; he clings in vain to his beloved rose-buds; his grasp relaxes; he falls; he dies; and with him

Unnumbered corpses strew the fatal plain.

Five minutes suffice for the execution. The veil may then be raised, the instrument removed, and the operation repeated upon a new horde of delinquents.

Beware, however, of leaving the poison which killed *Aphis*, upon the leaves of the rose tree. Let them be immediately syringed abundantly with lukewarm water, so as to remove the odor, or it may be found that in destroying our enemies we have also ruined our friends.

AGRICULTURAL STATISTICS OF N. YORK.—The N. Y. Herald publishes from an official source, the Agricultural Statistics of that State, and gives the following aggregates:

Acres of improved land in the State,	11,767,276
Acres of Barley under cultivation,	192,503
Bushels of Barley raised,	2,108,764
Acres of Peas under cultivation,	117,379
Acres of Rye sown,	317,099
Bushels of Rye harvested,	2,936,322
Acres of Oats sown,	1,026,915
Bushels of Oats harvested,	26,323,051
“ Peas raised,	1,761,508
Acres of Beans under cultivation,	16,231
Bushels of Beans raised,	162,167
Acres of Buckwheat under cultivation,	255,495
Bushels of Buckwheat raised,	3,364,679
Acres of Turnips under cultivation,	15,322
Bushels of Turnips raised,	1,250,332
Acres of Potatoes under cultivation,	255,762
Bushels of Potatoes raised,	23,653,418
Acres of Flax under cultivation,	46,069
Pounds of Flax raised,	2,897,062
Acres of Wheat sown,	1,013,665
“ Wheat harvested,	958,233
Bushels of Wheat raised,	13,391,770
Acres of Corn sown,	595,134
Bushels of Corn harvested,	14,722,114

From Downing's Horticulturist.

Remarks on the Black Wart of the Plum Tree.

In a recent number of the Boston Cultivator, there appeared a reply to the question of a correspondent, "*for a remedy for warts on Plum trees,*" in which the editor recommends the use of salt, and cites the practice of Dr. S. A. Shurtliff, of Brookline, who, he says, "excels in raising plums; his trees being free from black warts," etc. I may fairly claim to have had some experience with salt, as I have probably used as much or more of this article in the cultivation of the plum as any individual, having applied in February, 1845, *five hogheads on an acre*, and the year previous about one-third of this quantity; and for the last two seasons, my trees have produced greatly, particularly the Green Gage Plum.

My main object, however, in writing you at this time, is to give you an account of my trees as they appeared this spring. Soon after the flowering season, I observed a great number of the warts or excrescences, of a light brown colour, upon the branches—in many cases, to an extent of at least ten inches in length—breaking out generally upon the joints. They are not confined to those shoots of small growth, but I find them upon strong and weak shoots indiscriminately. I have carefully cut at least fifty of these excrescences, and *have not been able to detect a single worm or insect*. That an insect may be sometimes found in these knots, would not be surprising, as they are of a softer nature when they first appear than the bark, and insects may then find it a good situation for their eggs. But I do not believe they are produced by one, and least of all the curculio. My fruit has been most satisfactorily preserved for two years past, from the curculio, by the use of salt.

The varieties of plums which have been the most affected by knots this season with me, are the Frost Gage, Prince's Imperial, and the Red Gage; the Green Gage but little affected; Roe's Autumn Gage only somewhat touched by the disease. Those not at all affected are Dana's Yellow and the Wilkinson Prune, a large oblong blue free-stone, a native of Beverly, Mass.

I ventured to suggest, in the "Book of Fruits," that these knots may be produced somewhat as the excrescences are, which we find upon the Azalea or Swamp Pink, by an extravasation of sap. My opinion—and we all have a right to that—now is, that it is caused by a *diseased state of the sap*; and as Governor Lincoln said of the potatoe

rot, "it is death to the plant at last, if not cut off." I trust that the Horticulturist will contain the opinions of your cultivators and yourself on this subject. I have cut from about fifteen trees as much as could be wheeled in a common garden barrow, of limbs, &c., containing these unsightly excrescences.

Yours truly,

JOHN M. IVES.

Salem, Mass., July 20th, 1846.

Remarks.—Two of our correspondents, who are very acute observers and zealous cultivators, are pursuing a series of experiments with a view to clearing up the uncertain state of existing information respecting this disease, which is fatal to the Plum tree in some parts of the country. We hope by the close of this year, to be able to lay before our readers some interesting results on this subject.

If we recollect rightly, Dr. Shurtliff's practice was the application of brine to the wounded branch, after the wart had been cut out.

The Plum is naturally a marine tree, and it is surprising how much salt it will assimilate and thrive upon. We have, ourselves, given a single large tree a half bushel of salt in a season, applied to the surface of the ground in the spring, over an area as wide as the extent of the branches. The tree was in a sickly and enfeebled state, and it had the effect of restoring it to a healthy and luxuriant condition. But we considered this an extreme case, and should not recommend the abundant use of salt every year.

Mr. Ives' garden, as we know, is rather celebrated, in a neighbourhood not remarkable for plums, for its abundant production of this fruit; and he attributes it to the destructive effects of the salt on the curculio. This coincides with our own experience.—*Ed. of Horticulturist.*

CHICKEN SALAD.—Boil a chicken that weighs not more than a pound and a half. When very tender, take it up, cut it in small strips, and make the following sauce and turn over it: boil four eggs three minutes—take them out of the shells, mash and mix them with a couple of table-spoonfulls of olive oil, or melted butter, two-thirds of a tumblerfull of vinegar, a tea-spoonfull of mixed mustard, a tea-spoonfull of salt, a little pepper, and essence of celery, if you have it—if not it can be dispensed with. In making chicken salad, the dressing should not be put on until a few minutes before the salad is to be eaten; as by laying in it the chicken and celery will become hard.

Consumptive Patients.

THE *Horticulturalist* of the present month, in noticing *Bernan's History and Art of Warming and Ventilating Rooms, &c.*, makes the following extract from the work. It is, to say the least of it, quite amusing in its character, and we apprehend will not be likely to do harm. We all know that the freshness of the healthy milch cow's breath is proverbial; and the editor very well remembers to have heard it long ago observed, that the atmosphere of the cow-stable was wholesome.

The subject of warming and ventilating our apartments, is by the way, one which we seem to know but little about. We forget that we too frequently economize the fuel we use, at the expense of health. It cannot be healthy to live in our coal-stove rooms, where all the heat is retained, and no circulation of air kept up. A little extra fuel is cheaper than the Doctor's bill, or diseased lungs.—Ed.

"AFTER an illness, says Madame Meze-ray, during which I took little care of myself, I fell into a consumption. At length I spit blood in clots, and had other bad symptoms. I lost my sleep; and being as ill as possible, I had several consultations with the first physicians in Paris. They concluded my complaint was too far advanced to leave any hope of a cure; but they prescribed ass's milk, and exercise on horseback; which last I was too weak to take.

"I was nineteen. I beheld my end approach with deep dismay. One day, when I was bewailing myself, a very sensible friend of mine paid me a visit. In the midst of his condolence he said, since all the physicians abandon you, let me bring you a man who is treated here as a charlatan because he is not known, but who in my opinion is a man of merit. He brought him. I spit blood in clots. I was in such violent pain, and my fever was so high, that I cried out, 'Ah, if there be yet time, save me!' He promised to do all in his power; but I heard him say, in a low voice, that it was very late. He made me promise to follow his orders exactly, how painful soever they might be; and I kept my word. Finding that a remedy he prescribed had not the desired effect, he gave orders for a cow-house to be prepared for me, which was finished in a day, in a coach-house belonging to my house. They broke open a window, and contrived stalls for three cows; a wooden railing, high enough for me to lean upon, was all that separated me from the animals. My bed was placed upon planks about a foot from the ground, the better to let the filth run under; and the planks were purposely ill-joined, that the vapour might rise through them; and this was so strong, that every thing white which was brought in became reddish in a short time.

"My apartment was divided into two rooms. That which I lived in was pretty large, and held a bed with curtains, surrounded by a gauze blind to keep away the flies, which always abound in stables, and are particularly insupportable during illness, a wooden table, two straw chairs without cushions, and bare walls—such was my chamber. There was a sort of anti-chamber for the woman who took care of the cows. My surgeon and waiting-maid lodged over head. I had bells to call them at pleasure.

"I soon spit less blood. After being a week in the cow-house, my legs ceased swelling. Other symptoms improved. The night sweats I almost always had continued long after, but finally left me. From the moment I entered it, I renounced every species of food except milk: I did not taste bread even for nine months. People came to see me as an object of curiosity. The Duchess of Orleans paid me a visit; and, after my recovery, she recommended Doctor Saiffert to the Duke, which was the means of making his fortune. Here I remained nine months without intermission, with the exception of a few rides in a close carriage. In short, he saved me at the expense of my hair only, which all fell off. It was necessary to repair my fore teeth, which I had neglected in my illness; and I was absolutely forbid to play on the harp, which had made my breath very short; but what is all this in comparison with life? I am now become quite a strong woman; and although not so vigorous now at thirty-six as when I was nineteen, for all that I think I shall weather life out very well."

"In daring to commit such cases to the public," says the benevolent and enthusiastic Beddoes, "I feel that I am preparing a feast for those who resort to ridicule, if not as a test of truth, yet as the supreme delight of rational and immortal minds; but I hope also to interest those whom no ludicrous accessories can prevent from viewing with complacency the first awkward and unsteady advances towards a useful object."

A daughter of the celebrated Priestly having applied for advice: "In her case, to have placed the smallest reliance on medicine," says the doctor, "would have been to encourage a fatal delusion; and there only remained the choice between a sea-voyage and a constant residence with cows. She asked me which alternative I should prefer in her situation. I told her undoubtedly with cows." And she made the experiment under his direction.

The stable provided for this lady was twenty-four feet long, fourteen feet wide, and nine feet high. A space partitioned off, was

sufficient to contain a bed, a table, and allow a little room to move about in. Its floor, formed of rough boards, was raised a few inches above the ground of the stable. The windows were ill-placed; they faced the north, on account of the convenience of communicating with the house. They should have faced the south.

Two cows were placed in it for a month, and three cows for the remaining five months. There was a small stove in the part where Mrs. Finch lay, which was used for two months, for nearly half the day, but afterwards only in extreme frost, or on the room feeling damp.

The temperature for two months was kept from 60° to 65°, afterwards from 65° to 70°, but in general at 68°. The temperature was found best between the two latter temperatures, and the air at a medium between excessive damp and too dry heat of a stove. The stove lighted in the morning to dry a little of the moisture collected during the night, was pleasantest to her feelings. Successive generations of flies were found to be a great nuisance, and the cordage and other parts of the bed were speedily rotted. The vapors, however, gave nobody cold, nor did any attendant suffer from a longer or shorter continuance in a medium so much warmer than the external atmosphere. On the contrary, one lady who paid many and long visits, had her symptoms of chronic rheumatism much alleviated.

The management of the cows was found to be a matter of some importance. For a month or six weeks they were allowed very little straw, nor was their standing cleaned; afterwards they had plenty of straw, and their beds were kept tolerably dry. Hay of the best quality and free from dust, was found preferable on all accounts, and straw that was clean and dry. The cows were watered twice a day, but not so sparingly as they might have been. The better the hay they were supplied with, the less water was necessary. Their horns were noisy, particularly during the night; on that account young cows without horns would have been more desirable, and such as were young in calf; and halters better than chains to tie them with.

Mr. Finch observed, that if the patient could have been on a low floor above the cows, many disagreeable circumstances would have been avoided.

The effect of their wet was all along nauseous to a stranger, but the feelings of the patient should alone be consulted. The genial warmth relieved oppression on the chest, took off restlessness, and produced a feeling the lady described by comparing it

to nourishment conveyed through the pores of the skin; and so different were her feelings in the cow-house to what they were before, that she would have been reluctant to have changed her apartment for the night, however she might have wished a cleaner and more cheerful one for the day. After the first night, the air was, to use her own expression, *balsamic*.

In this she remained through autumn and winter, for six months, with three exceptions. About a week after her entrance, she slept a night out of the cow-house, when the hectic symptoms and night sweats which had left her, returned. Six weeks afterwards, she lived for three days in an apartment three degrees warmer than the cow-house. The night sweats did not return until the third night, and her breathing became laborious; instantaneous relief took place on returning to the cow-house. On a subsequent removal for a week no relapse occurred.

The effect on the cows living in a climate at this temperature was not observed by the doctor, but it is pleasing to reflect that while alleviating human suffering, the second mothers of mankind were benefited themselves. "A cow," says Anderson, "to enjoy existence, requires a temperature not lower than 50 degrees, nor higher than 70." But he sets one limit too low: a cow does not appear to feel pleasure in a climate under 60 degrees; and we have seen them in a north-easterly wind prefer a moist warm cow-house at 75 degrees, to one 10 degrees lower.

During the following winter, Mrs. Finch confined herself to an apartment heated artificially by a stove; but she then said, "I still prefer the air of the cow-house to my warm room, although it is of a good size, and lies to the sun."

INDIAN CORN.—We have more than once recently referred to the popularity which Indian corn, as an article of food, is attaining in this country. It will prove, ere long, a valuable export. The Government is most anxious that it should supersede, to a great extent, the potatoe amongst the labouring poor, and the recent scarcity of that esculent is favourable to its introduction. Cargoes of Indian corn are daily reaching the British ports from the United States, and large quantities have been released from bond, duty free, under the Treasury order. Shops for its exclusive retail sale, are being opened in many of the large towns, and the American mode of using it is generally adopted.—*Liverpool Times*.

From the Cultivator.

Successful Gardening—Produce of One Acre.

THE capability of our soil is but partially understood. With skilful management, it may be made to yield great burthens and profitable returns, where good markets are available. A few days since, a person—I am not allowed to give his name, for fear his landlord will raise his rent!—gave me the following as the produce of one acre of land within one mile of the capital, in 1845. The soil is a tenacious clay, and has been cultivated as a garden for many years, but never considered remarkable for its fertility.

It must be remembered that prices ranged high last year, which will account for the great amount received for the articles, viz., in round numbers:

100 bushels potatoes, sold at 4s.	\$50 00
32 do. corn in the ear, 3s.	12 00
65 do. onions, 4s.	82 50
13 do. carrots, 3s.	4 87
8 do. parsneps, 4s.	4 00
7 do. beets, 3s.	2 62
800 cabbages, 3s.	24 00
Horse radish, sold for	42 00
Fruit, sold for	10 00
Pigs fed on refuse of garden,	26 00

\$207 99

No manure was applied except what was made by the pigs; but the great produce is ascribed to the use of oyster-shell lime, at an expense of one dollar and fifty cents per year for three years. "It was wonderful," he says, "to see how the ground would heave and swell after every rain."

Lime, for agricultural purposes in this section, has not been very extensively used. Judge Buel tried some experiments with the Helderburg stone lime, but could never perceive any beneficial results from its application, and therefore abandoned its use. Probably if he had tried it in a clay soil, the results would have been different.

In Pennsylvania, Delaware and Maryland, lime has been pretty extensively used, and the lands have been nearly quadrupled in value in consequence. In advertising a farm for sale, as a recommendation, the amount of lime recently applied is particularly set forth, as well as the proximity of limestone.

It is not generally known, I believe, that a kiln for burning oyster-shell lime has been erected within a few years in the south part of the city, by Mr. Warner & Sons, where it is afforded at six cents per bushel.

I am informed by the proprietors that their sales have increased very considerably for the past year, and their future prospect is quite flattering. Many of our farmers have been experimenting with lime, and appear well pleased with its operation. Several thousand bushels have been taken down the river to enrich the soil, and it is hoped that those who have tried it, whether successful or unsuccessful, will communicate the results through the medium of the Cultivator, for the benefit of others.

There is one fact that has been communicated to me, which is entirely new, in regard to the action of lime, and that is, its effects are greatest in a lime soil or lime region. Can our chemists account for this?

C. N. BARNETT.

Barnett's Amer. Hotel, Albany, Aug., 1846.

Celebrated Oaks of England.

WE copy from an English publication the following brief sketch of some of the most remarkable English oaks of which we have at present any record. It probably will be both curious and interesting to some of our readers.

"The oldest oak in England is supposed to be the Parliament oak—from the tradition of Edward I., holding a parliament under its branches—in Clipstone Park, belonging to the Duke of Portland—this park being also the most ancient of the island; it was a park before the conquest, and was seized as such by the Conqueror. The tree is supposed to be 500 years old.

"The tallest oak in England was believed to be the property of the same nobleman; it was called the 'Duke's walking stick,' was higher than Westminster Abbey, and stood till of late years.

"The largest oak in this country is called Calthorp Oak, Yorkshire; it measures 78 feet in circumference, where the trunk meets the ground.

"The 'Three Shire Oak,' at Workshop, was so called from its covering part of the counties of York, Nottingham, and Derby. It had the greatest expanse of any recorded in this island, dropping over 767 square yards.

"The most productive oak was that of Gelonos, in Monmouthshire, felled in 1810. Its bark brought 200 pounds, and its timber 670 pounds.

"In the mansion of Tredegar Park, Monmouthshire, there is said to be a room 42 feet broad, and 227 feet long, the floor and wainscots of which were the production of a single oak tree, grown on the estate."—*Farmer & Mechanic.*

Why the East cannot Compete with the West.

BY COL. T. J. CARMICHAEL, SING SING.

HAVING spent my early life in the State of Ohio, where the farmer suffered so much for want of a market, before the days of steamboats, canals, and railroads, and witnessed the immense change which these inventions and improvements have made in the wealth and prosperity of the West, by affording a ready market for the lighter and most valuable products of the soil, I confess I was surprised on taking up my residence on the North river, to find the farmers here trying to compete with the great West in the same products, instead of turning their attention to the more bulky and perishable articles, for which they have a good market, and against which they may defy all Western competition.

Now let us try my position mathematically. And for that purpose, give a farmer on the Hudson river one hundred acres of the best arable land, at a cost of one hundred dollars per acre, and a Western farmer, say in Wisconsin, the same quantity at five dollars per acre—which is a full price for arable lands in that country under improvement. Now let each farm be located within the same distance from navigation, and allow the expenses of seeding and gathering of crops to be the same, and let the whole premises east and west be put into wheat.

First, the eastern farmer must manure at an expense of at least \$5 per acre, and if he is very fortunate he may raise 25 bushels per acre, or 2,500 bushels in all. This is good for 500 barrels of flour. Take flour at \$5 per barrel, and he has \$2,500. Now deduct ten cents per barrel for transportation, \$50. Now deduct the interest of cost of one hundred acres \$700, and manuring \$500, and you have \$1,250.

Now let us look at the operations of the western farmer, who with the same labour, minus manuring, is sure of an average of thirty bushels per acre—say 3,000—which is equal to 600 barrels of flour; deduct \$1 per barrel for freight, and at the same price in market he has \$2,400; deduct interest on the cost of land \$35, and he has \$2,365; now deduct the proceeds of the eastern farm, \$1,250, from that of the west, \$2,365, and you have \$1,115 balance in favour of the western farmer, nearly the entire proceeds of the eastern farm. Our eastern farmer asks then what shall we do? Our fathers used to make fortunes in raising grain! It is answered that your fathers lived in another age of the world, and were governed by circumstances; you see the

progress of the means of transportation—you see the enormous growth of the west—you feel the competition of that quarter in the lighter articles—you also see the high prices of bulky and perishable products in your market, without taking the advantage of such a state of things. By perishable products, I mean potatoes, turnips, beets, carrots, cabbage, fruit, and all other vegetables—together with fresh beef, mutton, pork, &c.

Now let us cultivate a farm on the North river, with some of these articles, all of which are about equally profitable. Suppose the same farmer should plant 50 acres in potatoes, and the same number in turnips, after manuring as for wheat. The potatoes should produce 200 bushels per acre, 10,000 bushels. These at three bushels to the barrel, are equal to 3,333 barrels, worth at least as many dollars in market, clear of freight. Now your fifty acres of turnips should yield 400 bushels per acre, 20,000 bushels, or 6,666 barrels, worth half a dollar per barrel clear of freight, \$3,333; to which add the crop of potatoes \$3,333, and you have \$6,666. From this sum deduct manuring and interest \$1,200, and the balance is \$5,466 from one hundred acres.

Now instead of marketing the turnips—which are a bulky article—let us adopt the European practice of purchasing stock in the interior of the country from the breeders, and fatten it for the market. It has been demonstrated that sixty bushels of turnips, and six hundred weight of hay properly fed, will fatten ten sheep, or one cow, in the best manner for the shambles, in the space of two months. Sheep and cattle can be purchased in the interior of the country, in low condition, for half their market value when fattened. This process here, as well as abroad, will yield the farmer a liberal increase.

On my late visit to Europe, I found that they adapted their business and products to their locations. In districts at a distance from market, they raise grain and breed stock, while those more convenient turn their attention to growing vegetables and fattening stock; and it is to this practice of making two professions, viz: fattening and breeding, that I attribute most of their success. In farming, like every other business, a man should never have "too many irons in the fire at once," some of them are liable to get burned. He who turns his attention either to one branch or the other, is the most likely to come out successful in the end. Who employs a physician to perform the duties of a surgeon, or a carpenter to build a brick or stone wall? And with def-

erence I submit to intelligent farmers, whether there is not as much difference in the modes and rules of *breeding stock* and *fattening it*, as in that of *raising grain* and *bulbous roots*?

It seems almost incredible to an American, that in many parts of Great Britain and France, the farmers pay \$20 per acre rent per annum, by the hundred acres, and yet they drive a thriving business, by adapting their products to their location, and yet it seldom happens that similar articles are higher there than in the New York markets.

I am inclined to think there is a mistaken opinion very general among our farmers, that they should produce at least as much of certain crops as they consume; as well may it be held, that every farmer should doctor his family, or plead his law,—when he can purchase cheaper than produce, or realize a greater income by selling one thing and buying another, why not do so.

Men are the sport of circumstances, when
Circumstances are the sport of men.

That farmer must play a losing game, who will not adapt his business to circumstances and location.

In connection with this subject we should not lose sight of the different breeds of stock. One is best adapted to the dairy and another to the shambles, but neither possesses both properties in the highest degree. And while it is admitted that the Leicester, Southdown and Cheviot sheep are the best mutton breeds, yet I see our farmers trying to compete with the West in raising Merinos for wool. The Durham it is demonstrated is the best breed for beef, on account of its size and early maturity, and we are fattening and breeding dairy cattle, though we see the great West flooding the country with butter, cheese and fine wool.

But in choosing breeds of stock in this country, I find great care must be taken; we have as much quackery in this line as in medicine. And this is one reason, I imagine, why the best are not more esteemed by our farmers; the truth is, they are seldom met with in our quarter, though so many profess to have them, we are often led astray by the *name*, without having informed ourselves as to the true form or figure of these animals.

I find we labour under another difficulty of quite a serious nature. The United States has a great variety of climate, varying in many respects from that of Great Britain, in its products, the habits of the people, and modes of agriculture. These facts should be carefully considered by the American farmer; while I would give Eu-

rope all the credit for her fine breeds of stock, I must insist that, aside from fattening and breeding, very little of her system of farming is adapted to this country. And yet most of our works on agriculture are either *reprints or compilations* of British publications. I grant it is true in the main, "that the modes and rules of culture which are successful in one place will be so in others, *provided we adapt them to the varying conditions of climate and situation*," but this adaptation seems to be the trouble or difficulty we have to encounter, and hence the necessity of a system of our own.

But while our farmers are in the habit of reading the penny news, instead of our agricultural papers and quarterly reviews, which may cost them from one to three dollars per annum, and are losing as many hundreds by bad management, there is but little hope for improvement.

Even England never woke up to this subject, until George the III. turned farmer, and thereby made it *fashionable* in that country—"necessity is the mother of invention," and the time is not far distant when our farmers will realize the application. What gave Bakewell his local immortality and wealth, but his genius in producing an *improved breed of mutton sheep*. Have our farmers less skill in this art?

Let farmers consider that book-making in the present age, both here and abroad, has become a trade of the printer. That authors *think* much less than they *write*, and *practice* less than either. Therefore it is that their works are of so little value to the practical man.

I find on experiment, that the pumpkin is even a better feed for sheep than the turnip, when run through the cutting machine, and every American farmer knows its utility in fattening cattle, and that it may be grown abundantly in a field of corn without injury to the crop.

I hope soon, however, to see the day when our practical farmers in different sections of the country will perceive the importance of *thinking* and *writing* more on their practice, with a view of seeking information and imparting knowledge to each other; by this means, and this only, we may soon establish an American system, however varied may be the climate, soil, or location.—*American Quarterly Journal of Science*.

Dec. 19th, 1845.

HILLY pastures with running waters, are better than meadows for the dairy: and cows should be driven gently from the pasture, not worried by dogs or unruly boys.

Adulteration of Milk.

THE subject of the adulteration of milk, was some time since investigated with great care, by M. Barruel of Paris. Although his observations were intended to apply only to the milk of that city, yet there is little doubt that they will also be found applicable, in a greater or less degree, to all large towns and cities. He commences in stating that *all instruments* for ascertaining the purity of milk, which are designed to attain this end by indicating differences in its density or specific gravity, are *inaccurate and useless*. For on the one hand, pure milk differs much in its density, according to the fodder used by the dairyman for his cows, the batyraceous matter which imparts lowness of density, being made to preponderate by some kinds of food, and the caseous part, which increases its density, being made preponderant by other kinds. And on the other hand, although water, the ordinary substance with which milk is adulterated by the dealers in the French metropolis, would alone cause a great diminution of density, the dealers know very well how to prevent that effect, and thereby render the aerometer or lactometer useless. For this purpose it is only necessary to dissolve in the milk a little sugar or sugar-candy, which is required at all events, in order to correct the flat taste imparted to milk by diluting it with water. The result of M. Barruel's inquiries on the adulteration of milk in Paris, was, that no positively noxious substance was, in any case, found in it; that a common practice was to remove a considerable portion of the cream, by allowing the milk to stand for a limited time, and then to dilute the remainder, or skimmed milk, with water, and to give it the apparent qualities of new milk by one or other of the methods now to be mentioned. The opacity of the milk being much diminished by the water, so that it acquired a bluish appearance, it was at one time usual to correct this defect, by previously mixing wheat flour with the water with which the milk was adulterated. But this deception was too obvious to the senses. Any person, even of indifferent delicacy of palate, could detect the altered taste of the milk; and besides, after two hours' rest, the flour precipitated to the bottom, and the translucent blueness was restored again to the milk. To prevent this inconvenience, the dealers boiled the flour in the water before mixing it with the milk; and in this manner an opaque mixture was obtained, which retained its opacity on standing. As even with this addition, the fabricated liquid had a flat taste, sugar or sugar-candy was dissolved in it, by which

means the peculiar sweetness of the milk was nearly restored. This adulteration, however, had become so easy of detection by means of iodine, which renders a mixture of boiled flour and water blue by its action on the fecula of the flour, that M. Barruel was in a belief, that the fraud now described had been but little practised in Paris. Driven from this species of adulteration, the dealers resort to another mode, so ingenious, that M. Barruel conceived they could not have discovered it without the aid of some scientific person. The method is so simple and cheap, that for one franc—184 cents—the opacity and colour of milk may be imparted to fifteen quarts of water, and so far secret that no disagreeable taste can be detected. This is nothing more than the employment of an emulsion of almonds, for which some dealers, more greedy and less cautious than the rest, substituted hemp seed, which, however, is liable to impart an acrid taste. By either of these means milk may be diluted to an indefinite extent; and the only corrective required is a little sugar or sugar-candy, to remove the flat taste. A peculiar advantage possessed by the latter mode of adulteration over every other, is, that the vegetable animal matter, or vegetable albumen of the emulsion, by which the oil of almonds is held in suspension, is coagulated or curdled, precisely like casein, by the addition of acids. This mode of adulteration, however, may be readily detected by the two following circumstances, viz.—the coagulum or curd, formed by acids in the mixture of milk and almond emulsion, as compared with that formed in milk alone, is but a little more than one-half; and the facility with which, by kneading the coagulum with the fingers, oil may be squeezed out of the almond curd, while none exists in that of the milk alone.

Another adulteration to which milk is subjected in Paris, is to add a small quantity of sub-carbonate of potash, or of soda, which saturating the acetic acid as it forms, prevents the coagulation or separation of curd; and some of the dealers practise this with so much success as to gain the reputation of selling milk that *never turns*. Often when coagulation has taken place, they restore the fluidity by a greater or less addition of one or the other of the fixed alkalies. The acetate of potash, or of soda, thus formed, has no injurious effect on health, and besides, milk naturally contains a small quantity of acetate of potash, but not an atom of free carbonated alkali. Hence the detection of this mixture is evidently the most difficult of the processes recommended in the various adulterations mentioned in M. Barruel's

paper. Indeed, a chemist alone could conduct it; while the two former modes may be easily performed by any person of common observation.—*Agriculturist*.

Seed Wheat.

WHATEVER difference of opinion may exist as regards the wisdom of the recent alterations in the laws respecting grain, there can be none as to the necessity of adapting ourselves to our present circumstances, and endeavouring to make the best of them. It is a known fact that in high latitudes the growth of plants is very rapid. The burst of spring, the splendor of summer, and the maturity and incipient decay of autumn, follow each other with a swiftness scarcely credible. The grain sown to-day, is, in a very few weeks, ready for the sickle; and the higher the latitude where it can be made to grow, the shorter is the period it requires for its growth and ripening. Grain which has been grown in the extreme north, when used as seed in a southern country, gives its first produce more speedily, ripening in a much shorter time, although at a second sowing it loses this quality. The fact has been recognized, and is acted upon pretty extensively in this country, it being commonly recommended to obtain seed from colder situations than those in which it is intended to be sown. In Sweden grain is annually brought for seed from Torneo, in the north of the gulf of Bothnia, and almost within the arctic circle—and sown in lands so much exposed that the sowing time is thrown so late that corn, excepting from seed thus obtained, has no time to ripen. Districts formerly on this account utterly barren, are thus rendered fruitful. Is it not then worthy of the consideration of some of our enterprising agriculturists, especially of those who occupy high cold districts, whether they might not profitably import their seed corn from the northern European nations, and thus, perhaps, obtain a harvest in September, where now it is commonly thrown into October or November? With this resource it might be found that wheat could be grown more extensively and more profitably than it is to the west of Sir Robert Peel's line drawn from Southampton to Inverness.—*Gardener's Chronicle*.

Philadelphia Agricultural Society.

A STATED meeting of the Philadelphia Society for promoting Agriculture was held on the 2d inst.—K. Smith, Vice-president, in the chair.

Mr. S. C. Ford gave an account of the progress of the potatoe disease. In some parts of Connecticut this season, he stated that some of the potatoes had become hard and tasteless at the time the vines were fresh and thrifty; and in other instances the vines and potatoes both decayed in a very few days. In some parts of this county the disease had made its appearance, suddenly destroying the crop. In some instances a portion of the crop remained good, whilst the other had rotted, and had entirely disappeared.

Some remarks were made by Mr. Gowen on the subject, sustaining his opinion as formerly given, attributing the cause of the disease to a particular state of the weather, inducing a second growth. He recommended deep planting on dry soils, as the best and most likely means of avoiding the rot.

Statements were given by Messrs. K. Smith, Eyre, Roberts, and others, on the subject, many of which were of a quite contradictory nature, causing much embarrassment in forming an opinion as to the true cause of difficulty.

Mr. Ford had applied two bushels of air slaked lime to each of his Newtown pippin apple trees, with great success; the quality of the fruit being greatly improved. Mr. Blackburn had noticed the same improvement in his fruit, but had applied no lime.

Extract from the minutes.

A. CLEMENT, *Rec. Sec'ry*.

Philadelphia, Sept. 4th, 1846.

Hussey's Wheat Reaping Machine.

To the Editor of the American Farmer:

SIR,—I have this year for the first time, purchased one of Hussey's Reaping Machines—the smaller size, at \$100. I have so often been disappointed in the too early purchase of new labour-saving and economical inventions, that in this instance I waited patiently, until it might have received the best impress of the inventor's skill, and I am now gratified, after a fair and full experiment at my late harvest, to make the following report of its performance, in common justice to the inventor, and for the encouragement of those who have not yet availed themselves of its advantages.

I have used the machine throughout my late harvest, and under very unfavourable weather, I have witnessed its expedition and general economy. The harvest was prolonged by continued rains, and the machine was not worked any entire day, from that cause alone; but being desirous to know the extent of its daily operations I noted the

hours of beginning or finishing a lot of twelve and a half measured acres of heavy wheat, viz: from five o'clock to a quarter to four, that is, ten and three-quarter hours; breakfast and dinner time included, say about two hours, will leave eight and three-quarters working hours for the cutting of twelve and a half acres, or the rate of eighteen acres per day of thirteen working hours, which is nearly the time in the middle of June, when the work was done.

I used with the machine, one pair of mules the whole of my harvest, about eight days, and without any apparent distress to them—this was done from the difficulty of breaking in any of them, they being all young, to bear the rattle of the machine in motion, and then too, though driven by two men, ran away with it, and luckily or surprisingly without injury to any person or thing—I had for a time, eight binders, but was compelled to add two others. It will be seen that I had a saving, by means of the machine, of twelve or fifteen dollars per day, for scythesmen's wages, besides their board, and the work was better done—the cost of binders, stokers, &c., the same necessarily, in either case, in the proportion of wheat cut.

I verily believe the amount of the seed wheat was saved by the superior performance of the machine.

I loaned the machine to a neighbour, who appreciates it as highly as I do.

JOSEPH E. MUSE.

August, 1846.

Selection of Seed Corn.

To the Editor of the American Farmer:

DEAR SIR,—As the time approaches when the corn crops should be gathered, I wish to suggest to each farmer who reads your paper, and through them to every neighbour of theirs who may not read it, the necessity and advantage of selecting seed corn in the fall, as they gather their crops of that great staple of our country. I wrote to our friend, Mr. Skinner, a long letter on this subject some twenty odd years ago, which was published in his *American Farmer*, and soon thereafter distributed to many, some of my seed corn, the increased product of which all acknowledged, and some of them profited considerably, no doubt, by the suggestions; and selling their seed corn at high prices—Mr. Baden, for instance: and some five or six years ago, I again wrote a short note, also published in the same paper. To the many who never saw those letters, who now read your paper, I would advise, that in cutting the tops off their corn this fall, to

leave the top on those stalks having two or three fine ears, and which are very forward, and the shuck or husk dry and white, thereby showing their forwardness. By the top, they can easily distinguish at gathering time the seed corn, and gather and house it to itself, and not take the shuck off until planting time in spring, keeping it until then secure from rats and vermin. And by continuing this process a few years, they will materially increase their corn crops, with so little trouble that no practical farmer should fail to try it.

I have never known one to try it, who did not acknowledge its benefits and increased yield of corn. Several have lately rode through my corn crop, and every one expressed his great surprise at seeing vastly more stalks with four and five fine large ears on each, than they ever saw before; and not one in many dozens without two or three fine ears on them. I ask all to try it a few years, and if not pleased with the result, to discontinue it. By this process they materially increase the product and increase its forwardness. I am fully satisfied from long experience, of the great advantage of reserving the best of many of our products for seed, and letting them grow fully ripe before harvesting; and earnestly recommend the same to all cultivators of the soil.

In haste, your ob't servant, &c.,

WM. COOK.

Horse-fork for Unloading Hay.

WE yesterday witnessed, says the Trenton Daily News, the operation of the labour-saving contrivance described in the following communication. About one ton of hay was unloaded from the rack and stowed away in a high mow, in the short space of six minutes—employing two men, a boy, and a horse. Mr. Abbott, in whose barn we witnessed the operation, informs us that it would employ twice the number of men one whole hour, to perform the same work by the old method. The fork is the invention of Mr. Garrett Brown, of Newtown, Bucks county, Penn.

Morrisville, June 26th, 1846.

GENTLEMEN,—Supposing you ever ready to give publicity through your valuable paper, to any thing that will contribute to the benefit of the farming part of the community, and supposing they are not generally aware of the utility, or even the existence, of a machine,—shall I call it?—that is capable of pitching or discharging a large load of hay in the short space of five minutes, I will inform you of a case. It con-

sists of a fork, rope, and two pulleys—the latter being attached to the rafters of the barn, and the rope fastened to the fork and passed through them and down to the floor, and by passing the end under a pulley-wheel and attaching a steady horse, one man may discharge a load of hay in the short space of time above mentioned, simply by placing the fork in the hay and directing it to the mow by means of a rope attached to the end of the handle. Now this is no humbug, for I had the pleasure of seeing it in operation to-day. Our intelligent and enterprising neighbour, George B. Abbott, for the purpose of showing the advantage and capability of it, stationed it in my barn, and discharged three loads in short order. Now I believe if any farmer who has much hay to gather, knowing the hard labour and time it requires to discharge a load of hay, could but see one in operation, he would not do long without one, as the cost is so small. Mr. Abbott thinks he can discharge with it, with ease, thirty or thirty-five tons in the course of the afternoon, from two till six o'clock—the usual time allotted among farmers for hauling—and I suppose by the hand fork the ordinary quantity would not exceed seven or eight; it would depend in some measure on the height of the mow. But with the horse fork, the height makes but little difference, or even the depth, for it is capable of placing the hay all over the mow, and thus dispense with the necessity of more than one person in the mow, and he only to tramp the hay down.

Yours respectfully, W. R. A.

We should be glad if some of our friends who have used this machine for unloading hay, would inform us of its operation. The editor has not seen one at work.—Ed.

PRESERVATION OF TOMATOES.—The powder of tomatoes, presented at the exhibition of the Royal Society of Horticulture, of Paris, in July last, reminded us of a mode of preservation pointed out last year, by M. Vilmorin. We think we ought to report it here. "M. Jullien, President of the Society of Agriculture of Joigny, has pointed out to us a mode of preserving tomatoes for several months. It consists in gathering at a late period, the fruit which has reached its full size, but which is yet green. Leave eight or ten inches of the stalk, and tie them in bunches of six or eight, taking away most of the leaves. These bunches are afterwards hung in an airy and dark place, where they will keep all winter. When it is required to use them, take the necessary number of bunches and place them near the

windows of a living room. The fruit reddens and ripens in a few days. This method suggested to us another, which will preserve them a shorter time, but which may also have its use. Green tomatoes, gathered the last of October, and set upon the latticed shelves of a well lighted fruit room, ripen there in succession; and at the moment when we write, such tomatoes have supplied our consumption for nearly six weeks. They are deprived of their leaves, like the others, and eight or ten inches of stalk left upon them.—*Revue Horticole.*

Premium Cows—Butter.

In the Report of the Essex County Agricultural Society, Mass., we find the cows to which premiums were awarded, belonged to the native breed. The following is a statement of the produce of the cow receiving the first premium of the Society. She belonged to Henry Cressy, of Salem, and was six years old. She calved the 21st of May, and gave milk as follows:

From 21st May to 21st June,	1,469 lbs. 4 oz.
21st June to 21st July,	1,264 0
21st July to 21st Aug.,	1,127 8
21st Aug. to 21st Sep.,	956 8

Total, 4,817 lbs. 4 oz.

It required nineteen pounds of this cow's milk to make one pound of butter. She was kept mostly on grass, but received during seven weeks two quarts of shorts per day.

The second premium was awarded to Warner Averill, of Ipswich. This cow was six years old, and gave on an average through four months, 35 pounds of milk per day. After she calved she received two quarts of meal per day for about six weeks. During September she received one quart of rye meal every night.

A seven-year old cow belonging to William Williams, also received a premium. She calved Feb. 6th, 1845. This calf was sold to the butcher for ten dollars when six weeks and three days old. After the calf was taken from her she gave from 14 to 15 quarts of milk per day, for about four months. In September she gave 8 quarts per day. The first two weeks after she calved she gave 10 quarts per day more than the calf could suck.

Butter exhibited for premiums was in pound lumps, in tin cases or boxes, so constructed that the whole was kept cool by lumps of ice in the centre box.

The process for making the first premium butter was as follows:

The milk was strained into tin pans, in

which it stood from 36 to 38 hours. It was then skimmed, and the cream was then put into tin pails, standing on the bottom of the cellar. A little salt was put into the pails before the cream, and stirred when cream was added. It was the practice to churn twice a week. The buttermilk is worked out by hand, without the addition of water. The buttermilk being thoroughly worked out, the butter is immediately salted with one ounce of ground rock salt to the pound, and after twenty-four hours is reworked, packed in layers of five pounds each, and salt sprinkled between them.

The second premium butter—the process pursued was to strain the milk into tin pans, and place it in a cool stone cellar, where it stood from 36 to 48 hours, when it was skimmed and the cream put into stone pots. Churn twice a week. When churned, the buttermilk is drawn off, and the butter washed twice with cold water. A mixture of rock salt and sugar is used in the proportion of one-fourth pound of sugar and three-fourths pound of salt, and one ounce of the mixture used for every pound of butter. After twenty-four hours the butter was reworked, and weighed in pound balls. The tin marketing boxes have ice coolers in the centre.

The third premium butter was made as follows: The milk strained into tin pans and placed in a cool cellar. Previous to churning it is lowered into the well and cooled. It is then churned, after the churn is soaked over night in cold water. The Randall cylinder churn is recommended. Churning once a week. Buttermilk removed wholly by the hands, and is never rinsed with cold water. The next day it is worked into pound lumps for market. It is salted with about three-fourths ounce of salt to the pound, to which is added some sugar and saltpetre.

The fourth premium butter was made as follows: The milk was strained into pans in which it stands from 24 to 36 hours in a cellar; the cream is kept in tin pails; churning performed once in four days in the early part of the season, and once a week in the latter part. The cream is strained through a cloth into the churn. The time required for churning averages only seven minutes. The butter is put into an earthen pan and water added and repeated till the buttermilk is thoroughly rinsed from the butter, or until it returns colourless. The butter is then worked over. Then it is put into an earthen pan and salted with one ounce of salt to a pound of butter. It is afterwards worked over again, piece by piece, and made into balls and put into the cellar till sent to mar-

ket. One cow made from the 20th day of May to the 20th day of September, 211 pounds and two ounces of butter.

The fifth premium butter was made much as above. Water was employed in forcing the butter from the buttermilk. It was salted with one ounce of salt and one-fourth ounce of loaf sugar to the pound.—*American Quarterly Journal*.

Irrigation.

By J. J. THOMAS.

THE application of water to the surface of lands, for the promotion of vegetable growth, has been practised, in warm countries, from the earliest ages. Its indispensable essential use in ancient Egypt, and the great benefits derived from its introduction at a later day into Italy, sufficiently established its eminent utility. But being less necessary in the cooler and more moist climate of Britain, it was afterwards less extensively practised in the system of agriculture which spread to the settlements of America. The summers of the northern and middle States, are equal in warmth to those of northern and central Italy; but in copying the practice of agriculture from England and Scotland, the wide difference in the heat and dryness of summers has been too much forgotten.

The great advantages resulting from a due proportion of moisture in the soil, must be evident to every one on a moment's reflection. Who does not know that nearly all farm crops, during vigorous growth, are benefited by frequent showers? Who has not noticed the great diminution in the amount of pasture and hay, in potatoes, ruta bagas, and other farm products, resulting from long continued or unusual drought? What farmer is ignorant of the fact that meadows and pastures in wet or moist situations, or which are occasionally overflowed by streams, are covered with a growth of herbage far heavier and more luxuriant than the diminished products of dry and unwatered uplands? Who, then, can question, that during the heat and drought of our summers, not unfrequently quite severe, our root crops would be greatly assisted in their growth, and our crops of grass double in weight, by artificial watering through channels spread over the surface of the land?

There appears to be but very few examples in this country, of well-conducted and systematic irrigation. A few, however, have sufficiently shown its advantages.

E. D. Andrews, of Pittsford, N. Y., says: "In the hilly country of Vermont, I owned a farm over which I carried the water of

a small stream in artificial channels, more than a mile. Lands that did not yield half a ton to the acre, were thus made at once to yield two tons; by which means I added to my crop six or eight tons." E. Wilbur, formerly of Yates county, N. Y., while a resident of that county, watered, artificially, a very dry and unproductive seven acre lot, by means of side channels from a stream which passed through the centre. About one day's work was needed in arranging and ploughing these furrows. "The effect was such," said he, "that it paid me a hundred fold for the seven acres, after the first year. It produced for several years, while I owned it, from two and a half to three tons of hay to the acre; and the man I sold it to, told me last year that he hardly ever saw such grass—there was hardly room on the ground to make the hay after it was mowed."

In the vicinity of Philadelphia irrigation has been occasionally practised. Permanent meadows are selected on the two facing slopes towards a stream, from which the water is diverted by successive parallel channels, carried as high up the sides of the valley as the head of the water will admit. Two and a half tons of hay to the acre, are a common crop on lands thus treated.

A brother of the writer, by spreading a small stream over the surface of his meadow, tripled at least the product from the land. A successful farmer of western New York, by allowing the wash or liquid manure from a barn on elevated ground to spread over about five acres of meadow, cut from a part of it no less than five tons of dried hay. Dr. Kirtland, of Cleveland, says that during the past parching season, a field was made to produce two tons of hay to the acre, by turning on it the wash of the yards and road, and the water from two small springs. He also states that an intelligent farmer purchased a farm consisting mostly of barren side hills, and dry, sterile, sandy flats. "He discovered, with the eye of an engineer, that a stream of some size might be turned from a deep glen, by means of a dam, and conducted upon one side of the glen, so as to be accumulated upon the back part of the farm. From this point it discharges at pleasure, upon different fields, in different directions. It is an interesting spectacle to view his different dams and canals, and to see the brook discharging from level to level, dividing and subdividing, over many acres, spreading fertility through all its varied meanderings. At this time the farm sustains a flock of 500 or 600 of the best Merino sheep.

Twenty years since, it would not have fed a twentieth part of that number.

Accidental instances often exhibit strongly the advantages of watering. "In a meadow belonging to the writer, a part of the land was occasionally overflowed by a large stream; another portion, of similar soil, was left dry. The watered portion was usually double and sometimes triple in product; and so clear was the line of demarcation between these portions, that high-water mark could be distinctly traced by the difference in growth, at any time before cutting the hay. Meadows on the lower side of the Erie canal in Niagara county, were noticed last summer, when water had escaped from the canal, to be at least double in growth in consequence; and a farmer who allows the wash from the public road, during all rains, to pass upon his adjacent meadow, cuts annually two and a half tons of hay to the acre.—*N. Y. Agricultural Transactions.*

PIN MAKING.—A Pin Manufactory has been started at Cabotville. Benedict & Ball have in successful operation three machines of their own invention for making the solid head pin, and one machine for sticking them on paper. They now make 240 pins a minute in each machine, and calculate, when they have perfected some parts of their machine, to make 300 pins a minute, or with three machines 54,000 per hour. Their sticking machine has caused them some considerable labour to perfect. They now stick 1200 pins per minute, the roll of paper rolling out to any length that may be desired, with a wider margin every ten rows, where it should be divided into the common paper.

THE GUANO TRADE.—It appears from a statistical document on Guano, published by the Peruvian government, that in the year 1841, the first year of commerce in this manure, there were 6,125 tons exported from the coast of Peru in twenty-three ships. In the following years the exportation was considerably augmented. Thus, from the year 1842, to the month of February of the past year, 106 vessels left Peru with about 32,000 tons; of which 2,522 were exported to France in eight French vessels, 300 to the United States, and 300 to Italy and Austria. The rest, nearly nine-tenths, took the direction of England.

We have an abundant season for fruit. Of peaches there has been an overflow. About the first week in this month, prices were extremely low.

A BRILLIANT WHITEWASH.—"Take half a bushel of nice, unslaked lime, slake it with boiling water, covering it during the process to keep in the steam. Strain the liquor through a fine sieve or strainer, and add to it a peck of clean salt, previously dissolved in warm water; three pounds of ground rice, ground to a thin paste and stirred and boiled hot; half a pound of powdered Spanish whiting, and a pound of clean glue, which has been previously dissolved by first soaking it well, and then hanging it over a slow fire, in a small kettle, within a large one filled with water. Add five gallons of hot water to the whole mixture; stir it well and let it stand a few days covered from the dirt. It should be put on quite hot; for this purpose it can be kept in a kettle on a portable furnace. It is said that about one pint of this mixture will cover a square yard upon the outside of a house, if properly applied. Brushes more or less small, may be used according to the neatness of the job required. It retains its brilliancy for many years. There is nothing of the kind that will compare with it either for inside or outside walls."

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, NINTH MONTH, 1846.

THE Philadelphia Society for promoting Agriculture, it will be remembered, holds its Annual Exhibition at the *Rising-Sun Tavern*, some three miles from this city, on the Germantown road, on the 30th inst., and the ploughing match will take place the next day. A list of the premiums offered, &c., will be found in our No. for the Seventh month last. We anticipate a large gathering of our friends, as well as a fine display of cattle, &c., &c.

Our Horticultural Society is busy in its preparations for the Exhibition which commences to-morrow, as does also the Annual Show of the New Castle County Agricultural Society, near Wilmington, Del. The New York State Society commences its Exhibition to-day at Auburn, and continues to-morrow and next day.

GEORGE S. APPLETON, No. 148 Chesnut street, has published for 1847, *Everybody's Almanac and Diary*, which, besides the usual calendar, list of the United States officers, &c., has a diary with room for memoranda for every day in the year. It is a very convenient Almanac for the business man. We think it a mistake, not to have given the Dominical letter. It may often be made use of when an Almanac is not at hand. We have them constantly for sale, price 37½ cts.

THE Horticultural Society of New Jersey will hold its Annual Meeting and Exhibition at Princeton on the 22nd, 23rd, and 24th inst., when premiums will be awarded for a great variety of fruits, flowers, &c.

WE refer our friends to the advertisement of Ezra Stokes. Catalogues of his trees may be obtained here, and orders forwarded to this office will be promptly attended to.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE,

A BEAUTIFUL FARM,

Nearly adjoining the city of Annapolis, Maryland, containing 350 acres of land, naturally of good quality, and during the last four years, I have had it highly improved with clover, plaster, ashes, lime, and other manures to the amount of upwards of fifteen hundred dollars. The fences and buildings are all in good repair, and divided into ten departments, including one peach orchard, containing upwards of 1500 trees, in fine health of three summers' growth, and an apple orchard in full bearing. About 150 acres of this land are covered with the best sort of building timber.

I have a good wharf, where a large schooner can lie and receive or deliver produce. This farm is very pleasantly situated, high and dry, and about rolling enough to cast off extra rain water,—also has good spring water in several of the fields. The buildings consist of a good dwelling, nearly new, two brick servant houses, one house for the manager, two large tobacco houses, 30 by 70 feet each, one is used for a barn; stabling, corn, milk, and hen houses. From the above dwelling I can go to the Annapolis market in about fifteen minutes, where we have a tolerably good market for hay, peaches, sweet potatoes, milk and butter. Of milk about \$3000 worth may be sold annually. Freight is cheap to Baltimore, which is an excellent market, with which we have daily intercourse, both by steam and otherwise. But few farms have the same opportunities of doing business to profit, being now in good order to make money, and only on account of advanced age, infirmities, and residing at a distance, am I induced to part with it. It will be sold cheap. Persons desirous of seeing the place, will please call on me, near Baltimore, Md., and I will go and show it.

ROBERT SINCLAIR, Nurseryman.

August 28th.—41.

TREES FOR SALE.

The Subscriber has for sale at the Mount Laurel Nursery,—established by J. Needles—an extensive assortment of Apple, Pear, Peach, Plum, and Cherry Trees and Grape Vines. Also, a great variety of

ORNAMENTAL AND EVERGREEN TREES,

Which are of the best quality, and good size for transplanting. Orders left with Josiah Tatum, No. 50, N. Fourth street, will be punctually attended to, where catalogues may be procured.

EZRA STOKES.

*Mount Laurel, near Moorestown, N. J.,
Eighth month 15th, 1846.*

SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Eye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoes Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guarantee in parcels to suit purchasers.

M. S. POWELL.
if.

Philad., Feb., 1846.

FOR SALE,**AT D. O. PROUTY'S****AGRICULTURAL WAREHOUSE,**

No. 19½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—1f.

The quantity of rain which fell in the 8th month, 1846, was a little more than four inches and a quarter.

4.97 inches.

Penn. Hospital, 9th mo. 1st.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest quality and best Varieties,—Bird Seeds, &c.

JOE. P. H. COATES.

Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA**AGRICULTURAL WAREHOUSE,**

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW**Horticultural and Agricultural Ware-house,**

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweeds Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Eighth month 15th, 1846.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUIST'S ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
“ ANIMAL CHEMISTRY,	25
“ FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

✎ We are prepared to bind books to order.

GUANO.

TWENTY-FIVE tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by

S. & J. J. ALLEN & CO.,

No. 7 South Wharves, 3rd Oil Store below Market street, Philadelphia.

October 15th, 1845.

tf.

Pondrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Center street. Present price, for seven barrels or more, \$1 75 per barrel, containing four bushels each. Any number of barrels less than seven, \$2 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for wheat.

JOSIAH TATUM.

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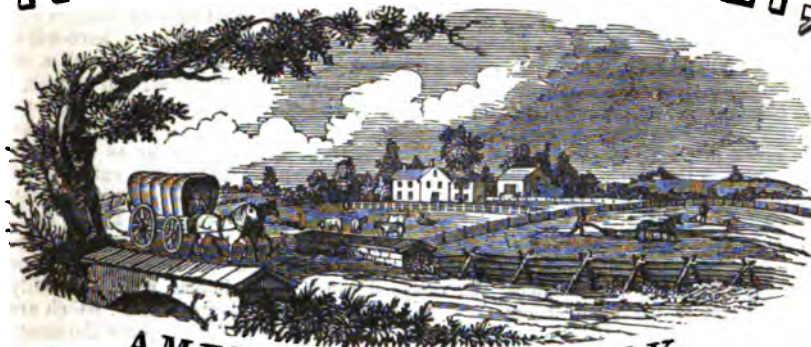
All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post Office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO
AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIVINGS.

Vol. XL—No. 3.]

10th mo. (October) 15th, 1846.

[Whole No. 141.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page

Soiling, or House Feeding.

THE practice of soiling stock prevails to some, but not within my observation, to a great extent, in England. The soiling of stock, implies the keeping of them in stables or yards all the season, and bringing to them green feed, when it is to be obtained, cut fresh from the fields. I have not been able to get that exact information on the subject which I should have desired; and perhaps it would be vain to look for it.

Work horses are almost universally soiled in England upon clover, rye grass, rye, vetches or tares, or rye and vetches sown together. These are sown expressly for this purpose. The horses are frequently kept upon them without any additional feed; but when on the road, or when the farm work is severe, they require grain of some sort in addition.

Sheep, as I have before said, which are in a course of preparation for the market, and sometimes store sheep, especially those

which have lambs by their side, that are designed for market, are folded, and the tares cut green and conveyed to them, which may be considered as soiling. A large stock on Lord Hatherton's admirably managed farm at Teddesley Park, in Staffordshire, are soiled; and their good condition evinced the excellent care which was taken of them. In many cases, in small holdings, I have found the system pursued with great success. On Lord Gosford's estates in Ireland, under the judicious and excellent care of Mr. Blacker, who has the superintendence, as he informed me, of several hundreds of tenants—such are the subdivisions of estates in that country,—I found that among many of these small tenants he had introduced the practice of soiling their cows. Several, whom I visited, were keeping in good health, and with great advantage, three or four cows, where formerly they kept but one, and that one in a half-starved condition. It is said that in Ireland a cow is sometimes recommended for her capacity of getting her own living by leaping hedge and ditch, and foraging any where at her pleasure. Under a system of soiling, that branch of her education might well be dispensed with, much to the advantage of the peace of the neighbourhood.*

* It is not so far as Ireland that we need go to find cows notorious for these qualifications. Within less than a hundred miles of where we write, we have

That a great saving of food is effected by soiling, there can be no doubt; no one rates it at less than two to one; many say that three animals, some assert with confidence that four animals, can be well kept upon the produce of land, if soiled, where not more than one could be kept if depastured. The difference, undoubtedly, in this respect, is very great in favour of soiling; but its expediency upon the whole, in any given case, will be affected by a variety of local circumstances.

The soiling of work horses on a farm is always to be advised. They require the most particular superintendence; but this can be given to them only when they are near at hand. They should be protected against those extreme changes of temperature from which they are likely to suffer if turned into a pasture at night after a hard day's work. They require to have their food prepared for and brought to them; otherwise much of the time which should be given to sleep and repose, is necessarily devoted to obtaining their food; and a horse turned empty at night into a pasture, will be likely to pass a great part of that night in filling his stomach. The same remark applies also to working oxen. It is highly creditable to the English farmers that their work horses are attended to with the most particular and faithful care, as to cleaning, littering, feeding, working, and watering. I have referred already to the practice of one distinguished farmer, who never allowed his horses to be trimmed, or curried, or housed, against their inclination. He was of opinion, that nature, in this respect, was the best guide; and that she gave the animals their thick and matted coat, in winter, when they required it, and it was therefore wrong to deprive them of it; and in the spring she took equal care in divesting them of the covering, which then became oppressive and superfluous. There may be some reason in this; but whenever I see either horses or men in this shaggy and wild-beard condition, I cannot help thinking that nature may be somewhat improved upon. It cannot be said of this farmer, however, that he did not give his horses the opportunity of sheltering themselves if so they chose; for he had warm sheds and open stalls, most amply littered, to which they might have recourse at pleasure. This latter circum-

stance, of leaving them loose, was a feature in his management much to be commended; for it seems a great cruelty, though not an infrequent practice, to tie a hard-working horse in a close box or stall, with a short halter, where he cannot stretch himself, nor lie down but in a constrained position.

Nothing, indeed, is more remarkable throughout England, as far as my observation has extended, than the care and kindness bestowed upon the horses; excepting always the omnibus and cab horses in London,* who seem, like galley-slaves, to be sentenced to hard labour as a punishment, and the hunting horses, who, especially in what are called *steeple chases*, which are in fact only trials of speed under the most unfavourable circumstances, are subjected to a severity of usage absolutely barbarous. I had the pleasure of enjoying the hospitality of a family of high rank, at whose residence forty or fifty carriage and hunting horses were kept, and where it was the custom for the principal members of the family, and their guests, to visit, by a covered passage way, the stables late in the evening, to see that everything was in order; that the grooms and their respective charges were in their places, and in proper condition; and that the noble animals, who contributed so essentially to their pleasure and comfort, were duly cared for. The establishment was a model of neatness and good management. I have had the pleasure to find many a farm stable, where the comfort and health of its occupants were provided for with a carefulness equally exemplary. I confess I never witnessed such kind, and only proper care bestowed upon these noble animals without a strong desire that some other animals employed in the labour of the farm, certainly not less noble, and whose toil is equally severe, were the objects of a similar care and kindness.

With respect to the soiling of sheep, it could rarely be practised on any extensive plan; but the folding of sheep for fattening, and with a view to enrich the land in the fields, where the produce grows, which may

known many, which turned into the highway by their owners, have become adepts in *letting down bars—casting off riders, and leaping the fence*, in search of what, no doubt, it seemed obvious to them, they were sent forth to seek, and which, as their owners knew, they could certainly not obtain on the bare road side.—Ed.

* A similar observation applies to our cab and omnibus horses in this city. Many of them look well, and give a good report of their owners and drivers, while the muscular powers of others are obviously too severely taxed. This service is at best, very severe upon horses, and humanity as well as interest should prompt the bestowal of every care and attention in the case. These carriages are—we suppose necessarily—made very heavy, and it should be remembered, that with a load of twelve to five and twenty grown persons, they require in their rapid motion, the expenditure of great force.—Ed.

be considered as one form of soiling, is universally practised. Experiments have been made on the feeding of sheep entirely within a yard; and the result, with respect to an eminent farmer in Yorkshire, whose establishment I had the pleasure of visiting, seemed to show that much was gained by this process, inasmuch as the animals consumed a much less quantity of food, in the proportion of 30 to 50, than animals which had a free range; but latter experiments, by other individuals, do not confirm these results. Mr. Pusey, for example, states, that he "kept ten Down lambs in a shed, and ten out of doors, weighing each lot regularly; but found the gain of weight rather on the side of the lambs fed out of doors." It is extremely difficult to say why one experiment succeeds, and another of the same kind fails or gives an entirely different result; but this is a frequent occurrence, and requires us to draw conclusions from single or from few facts with extreme caution. We can presume to be confident only when these facts are multiplied, and often repeated under the same circumstances, and always with the same results.

With respect to the soiling of cattle, it is the case with some farmers that their calves are never turned into the field until they are a year old, and that many cattle may be said to be wholly reared in the stall. The fat stock, which are sent to the Smithfield cattle-show, and much of what is designed for the market, are kept altogether in the stalls or in loose boxes, as they are here termed.

In regard to milch cows in the country, they are commonly depastured; but in the large dairy establishments of London and its vicinity, they are wholly soiled. After being once placed in the stalls, they are never untied, excepting in some cases where they are loosened for the purpose of being watered, until their milk ceases to be sufficient to meet the expense of their keeping. They are then fattened and sold to the butcher. The feed is cut and daily brought to them in a green state, sometimes from a considerable distance. In such a city, cows, if kept at all, must be kept in the house; and during the season when green feed is attainable, it is of course obtained, for its advantages in increasing the milk.

Two great advantages of soiling cattle are, first, the increase of manure; and second, the keeping of more cattle on the same land.

The increase of manure from soiling is very far beyond what would be supposed by any one not experienced. Where proper provision is made for this purpose, all the manure of the animals is saved, instead of

being left and scattered either on the road side, or in the fields, to be dried up by the sun, or washed away by the rain; and it is at hand to be applied as the farmer shall choose. It gives him an opportunity of converting all his long litter, and the straw of his farm, into the most valuable of manure, by using it as an absorbent for a large amount of the liquid portions of the excrements of his cattle. It affords him likewise the power, by properly-constructed gutters and tanks, of saving his liquid manure—the best portion, if well managed, and according to the estimation of many eminent farmers, compared with the solid portions of the manure, in point of value, full two to one.

The next great advantage of soiling is the increased stock which may be kept upon the same land. From the various facts which have come under my observation, where the soil is carefully and judiciously cultivated, and duly manured, and a proper rotation observed, I believe that on land under artificial grass or esculent crops, three animals may be soiled where one only is now grazed. I believe this may be done with equal or superior advantage to the health and thrift of the animals, and that, in most cases, the increase of valuable manure obtained in this way, will much more than pay for any extraordinary trouble of attendance.

Another advantage is in the saving of interior fences upon a farm. Where cattle are kept constantly in barns or yards, the necessity of enclosures is of course done away; and separate from the saving of expense in the case, the convenience of cultivating in long lines and open fields, the saving of land, and the superior neatness of the cultivation, are great and obvious advantages.

The trouble of cutting and carrying the fodder for a large stock, presents to many persons an insuperable objection to soiling. This, however, must depend on local circumstances, which every farmer must take into consideration for himself. Without doubt, in some cases it might be such as to render the experiment ineligible. The difficulty of finding a supply of green feed sufficiently early in the spring, is likewise made an objection. This may be an objection in many localities; but in England proper, where an ample supply of Swedish turnips, carrots, and mangel-wurzel, are grown, and where winter vetches, rye, Italian rye grass, and lucerne, afford an early cutting, this objection does not apply. It has been objected that cows soiled will not give so much milk as when grazed; on the other hand, the testimony of some individuals

with whom I have become acquainted, establishes the contrary. At Teddesley, in Staffordshire, where a large stock is soiled, the opinion is, that the cows do not give so much milk as when grazed. At Glasnevin, Ireland, the opinion of the intelligent superintendent of that establishment is, that their production of milk under the soiling system is much greater than when grazed. In a trial lately reported upon the comparative advantages of feeding cows with malt or barley, and other articles of food, it was found that, upon being taken from the fields to the stalls, the milk of these cows was considerably increased. It is difficult to make a comparison in the case upon which the matter may be confidently determined. The quality of milk must, to a degree, depend upon the nature, and its quantity upon the supply, of the food which the animal receives. Some animals naturally and constitutionally, from peculiarities or circumstances which have never yet been explained, secrete milk of a much richer quality than others. The Alderney or Guernsey cows are remarkable examples of this kind, their milk being much richer than that of any other breed of cows known. Yet that the quality of the milk is not wholly constitutional, but depends to a considerable degree upon the nature of the food on which the cow is fed, is well established. Its quantity, of course, depends upon the supply of food which the animal receives. It seems to be determined by experiments which have been made here, that, of all food, grass fed green will produce the largest secretions of milk. It is found, likewise, by experiment, that in order to the largest secretions of milk, the temperature in which the animal is placed must be comfortable; she must be free from external annoyances; and she must be "at ease in her mind." These things being equal, it is not easy to see why, under an ample supply of fresh grass eaten with a good appetite, there should not be an equal production of milk in the stall, as in the pasture.—*Colman's Tour.*

For the Farmers' Cabinet.

The Potatoe.

MR. EDITOR,—In your last No. I notice an article on the Potatoe, relating to the cause and cure of its disease, from your correspondent, D. W. Belisle.

I am sorry to be obliged to differ from that gentleman on many points laid down in his letter. I regret this the more, from the fact that I am proud to number him among my acquaintances. But his views are so different from those of our standard agricultural chemists and vegetable physiologists, and so

little sustained by experience; and withal, so liable to lead to error, that I cannot allow myself to remain silent.

He says that the vegetable sap contains "charcoal, hydrogen, and oxygen, and they embrace all the alkalies that the vegetable derives from the earth." As the vegetable derives all its alkalies from the earth, Mr. Belisle would have us believe that "charcoal, hydrogen, and oxygen," contain a great deal of alkali, for many vegetables contain much of this material. Now hydrogen and oxygen are pure elements, and so far from being *alkaline* in their nature, they, in combination with other substances, go to form *acids*, which are directly opposite in their nature to alkalies.

As to charcoal, it does, when fresh, supply a very small quantity of silicate of potash, but the alkaline principle is very far from being sufficient for most plants, even when they grow in a bed of charcoal; but to talk of charcoal supplying vegetables with *all* their alkalies, is to lay aside chemistry and experience. What farmer does not know that most of his land has little or no charcoal in it, and yet his plants grow finely and are productive.

Again, Dr. Liebig holds forth the idea in his Agricultural Chemistry, that vegetables cannot absorb so coarse a compound as charcoal; and, indeed, it is difficult to perceive how charcoal could pass through the minute pores of vegetables—it being recollected that the vegetable has no teeth to chew the charcoal fine enough for its purpose. In all our works on this subject that I have examined, I do not see that any of the botanical nor chemical students, before Mr. Belisle, have been able to discover this charcoal in the sap. I am, therefore, induced to believe that he is mistaken in his views in this respect, as in that of "hydrogen and oxygen" yielding alkalies to the vegetable.

Your correspondent says that ammonia rises from the manure, is absorbed by the plant, and immediately after mingling with the secretions of the plant, poisons it, and then, "and not till then, does the plant undergo any decomposition whatever." If that be the case, how is it that the plant grows luxuriantly until the latter part of July or August, apparently in excellent health. The ammonia commences rising from the hill as soon soon as the manure is placed there, and is absorbed by the leaves of the plant as soon as the plant has leaves to absorb it, yet, for months after, the plant is not affected by it. How is this? There must be something wrong here—experience fails to agree with your correspondent, and the facts of the case do not sustain him.

But we come to the most important part of the communication alluded to above, viz: the remedy for the dreadful disease which is now destroying the potatoe crop. Mr. Belisle's own words are, "The remedy is this: When a farmer sees his potatoe tops thus withering, he should lose no time in mowing them off below the blight, and by this means he will save his crop." There is no doubt that under favourable circumstances, cutting off the tops will prevent the disease, but the crop must be shortened, and the potatoes rendered not fit for use, or at least they will be lessened in nutritive matter. If Mr. Belisle will call on me I will show him potatoes that were perfectly healthy when they were dug up, but after remaining up a few days, became diseased, and are now rapidly rotting. Now at the time these became diseased they had no tops to cut off, consequently the tops did not cause the disease, and "the remedy" could not be used. I will also show him a portion of those potatoes which had commenced rotting, but which I have stopped from rotting; and if he will remain with me long enough—say two months—I will take others of those half-rotten potatoes and stop the rot immediately, and the potatoe shall be in excellent order for planting, or for domestic purposes. And I will guarantee that the entire cost of stopping the disease and restoring the vegetable to health, shall not be more than twelve and a half cents per bushel—at any rate I am prepared to take a few hundred thousand bushels at that rate of charge for my services, if I stop the disease; if I do not, I will charge nothing.

If Mr. B. had said that his process was "a remedy," I should not so much object; but to say that it, and it only, is "the remedy," I must beg leave to put in my protest. I should like to say more of this gentleman's views, but my article has grown to a much greater length than I had at first intended to make it, and must therefore close it.

CHEMICO.

Wilkesbarre, Pa., October 1st, 1846.

The Noisette or Champney Rose.

Rosa Champneyana.

PERHAPS no new roses ever excited more attention than the two varieties which were first produced of this interesting family. When first received in France, the Parisian amateurs were enraptured with it, its habits being so peculiar and distinct from every other class. The origin of the first varieties of this remarkable group, has been announced erroneously to the world by various writers. The original variety is the Champ-

ney Rose, or Champney's Pink Cluster, a rose long well known and very widely diffused. It was raised from seed by the late John Champney, Esq., of Charleston, S. C., an eminent and most liberal votary of Flora, from the seed of the White Musk Rose, or *Rosa Moschata*, fertilized by the old Blush China, and as he had been for a long period in constant correspondence with the late William Prince, he most kindly presented him with two tubs, each containing six plants, grown from cuttings of the original plant. From these an immense number were propagated and sent to England and France. The old *Blush Noisette* Rose was a few years after raised by Philippe Noisette from the seed of the *Champney Rose*, and this he sent to his brother Louis Noisette, of Paris, under the name of the *Noisette Rose*. It is more double than its parent, and of much more dwarf and compact growth; the flowers in very large dense panicles. The old *Champney's Pink Cluster*, although not full double, is still quite a favourite for its rapid growth, its appropriateness for pillars and other climbing positions, and for the profusion of its flowers, which are in large panicles much more diffuse than the preceding variety. The subsequent varieties have been produced from both the primitive ones I have named, but as the Champney rose produces seeds far more abundantly than the *Blush Noisette*, it has doubtless been the parent of much the greater number.

To develop the beauties and admirable qualities of the *Noisette* Roses, proper attention must be paid to their culture; the soil must be warm, dry at the bottom, and well mellowed and enriched with old well-rotted manure, or black mould from the woods to the depth of two feet; they will not flourish in a wet soil, and if the location is either a wet or heavy soil, a quantity of sand must be mixed with it sufficiently to lighten it, and render it completely permeable, so as to allow of the free passage of all rains through it.

The perfume of the Musk Rose is very apparent: its tendency to bloom in large clusters also shows its affinity to that old and very remarkable rose, but since its introduction to France so many seedlings have been raised from it, and so many of these are evidently hybrids of the Tea-scented and other roses, that some of the roses called *Noisettes*, have almost lost the characters of the group; for, in proportion as the size of the flowers have been increased by hybridizing, their clustering tendency and the number of them in one corymb has been diminished.—*Prince's Manual of Roses.*

Good Housewifery and Evil.

BY THOMAS TUSSEK.

Ill huswifery lieth
Till nine of the clock :
Good huswifery trieth
To rise with the cock.

Ill huswifery trusteth
To him and to her :
Good huswifery lusteth
Herself for to stir.

Ill huswifery careth
For this nor for that :
Good huswifery spareth
For fear ye wot what.

Ill huswifery pricketh
Herself up in pride :
Good huswifery tricketh
Her house as a bride.

Ill huswifery one thing
Or other must crave :
Good huswifery nothing
But needful will have.

Ill huswifery moveth
With gossip to spend :
Good huswifery loveth
Her household to tend.

Ill huswifery brooketh
Mad toys in her head :
Good huswifery looketh
That all things be fed.

Ill huswifery bringeth
A shilling to naught :
Good huswifery singeth—
Her coffers full fraught.

Ill huswifery rendeth,
And casteth aside :
Good huswifery mendeth,
Else would it go wide.

Ill huswifery craveth
In secret to borrow :
Good huswifery saveth
To-day, for to-morrow.

Ill huswifery pineth,
Not having to eat :
Good huswifery dineth
With plenty of meat.

The Mustard Plant.

The following paragraph is found in an Address delivered by Jacob Green in Albany, in 1814, before the Society for the Promotion of Useful Arts. In confirm-

ation of the sentiment there expressed more than thirty years ago, that this plant "might yield no trifling profit to the American cultivator," we would refer to the 90th page of our last volume, where the account of a crop raised by J. H. Parmlee, of Ohio, is given by C. J. Fell & Brother, of this city.—Ed.

THE Sinapis, or Mustard, is a plant which might yield no trifling profit to the American cultivator. Small clusters of it are seen growing in our fields and gardens; but whether it is a native of the country, or merely the fruit of chance, I am not able to determine. In some catalogues, however, it is marked as an exotic; but our climate is congenial to its habit, and almost every soil is adapted to its growth. A gentleman from Orange county, in this State, has informed me, that he collected from half an acre of but tolerable land, fourteen bushels of the seed, which he believed equal in quality to that of the *Sinapis Arvensis*, commonly known by the name of Durham mustard. There are many species of this herb, but it would be well for the cultivator to confine his attention to the one just mentioned, the seed of which is more abundant and of a better quality than in the other kinds. The high price given for imported mustard, and the facility with which it can be raised, induce a belief that farmers generally might find their account in making it an article of culture and traffic.

Value of Smoke.

A late number of the British Quarterly Review, has the following statement. Ingenuity and a disposition to turn every thing to account, sometimes bring about curious results. A great deal that is now abandoned as useless, will one day be made subservient to our wants, and perhaps become important agents in ministering to our pleasures.—Ed.

THE British Quarterly Review for March, contains the following paragraph :

"A striking instance of economical talent came to our knowledge in the District of Alston Moor. From the smelting earths of one 'house' an arched tunnel conducts the smoke to an outlet at a distance from the works, in a waste spot, where no one can complain of it. The gathering matter or 'fume' resulting from the passage of the smoke, is annually submitted to a process, by which, at that time, it yielded enough to pay for the construction of the chimney. A similar tunnel chimney, three miles in length, was erecting at Allendale. Its fume will yield thousands of pounds sterling per annum. In this case smoke does not end in smoke."

Imported Stock.

THE following description, &c., of the stock recently imported by the Massachusetts Society for promoting Agriculture, is written by E. Phinney, one of the active officers of that Society, and we copy from the *Farmers' Library*. It will be read with much interest, and we cannot but commend the public spirit of our eastern friends.—*Ed.*

THE trustees, with an honest desire of promoting the interests of agriculture and improvement in the various branches of rural economy, had, for many years, devoted the income of the Society's funds to premiums on the best cultivated farms, on the various kinds of farm produce, farm stock, and to such other objects as they believed best calculated to promote the interest of the great body of farmers. Of the effect of their labours, the public can be the best judge.

It seemed to the trustees that very little progress had been made, particularly in the dairy stock of the country. They could point to no particular object, no decided mark of improvement or permanent change, upon which the future and progressive improvement of our dairy stock could, with any certainty, be calculated.

Thousands of dollars have been offered and awarded in premiums for the best milch cows within the commonwealth, during the last twenty years, and, as appeared to the trustees, to *very little benefit*. Whoever has attended our cattle shows will have occasionally met with a cow remarkable for her milking properties, which the fortunate owner purchased from some drove. This *accidental* cow is exhibited at the cattle show; well authenticated proofs of her great yield of milk or butter are produced; the owner takes the highest prize, and puts the money into his pocket; the calf is sold to the butcher; and the cow the next year is put into the beef barrel. And this has been the beginning and the end of most of the native cows to which the highest prizes have been awarded. The writer knows not a single instance where the offspring of any one of these high-premium native cows has inherited the valuable properties of the dam in a sufficient degree to induce the owner to raise it, with the exception, perhaps, of the famous Groton cow, whose descendants, in the hands of Colonel Jaques, might have added greatly to the value of our dairy stock, had the Colonel possessed the means of carrying out his plans; and, in this instance, the valuable properties of the dam were transmitted to the progeny solely by the means of crossing with the pure breed of a foreign stock. The cautious farmer will not run the risk, nor incur the expense, of rais-

ing a calf from stock, of the origin of which, and of the blood of the various breeds that runs in the veins of his favourite cow, he knows nothing. Acting from a belief in the truth of the old adage, which has been taught him from his youth upward, that "a good cow *may* have a bad calf," he can have no assurance that the descendant of his native cow will not take its character from, and inherit the inferior properties of, some near or more remote ancestor. He had rather take his chance in the next drove that comes along, knowing that he shall at least avoid the expense and trouble of rearing a calf upon whose good properties he can make no certain calculation. Now it will hardly be pretended that the offering and awarding of premiums for this description of cows has, or ever will have, the effect to improve the dairy stock of the country.

The writer would by no means detract from the value of these accidentally good cows, the natives of the country. There are, no doubt, to be found among the farmers of Massachusetts, many cows of native origin, possessing as valuable properties for all purposes, except for breeding, as any that can be imported from abroad. And they are not without their value as breeders, where they and their descendants may be crossed with the pure blood of some long and well established race of foreign animals. In this way we may chance to perpetuate the rare qualities of our native cows, united with the well established traits of character of the imported stock.

It may be contended that we need not the aid of foreign stock to raise up one of the best breeds of cattle in the world. This may be true; but who will undertake it? What individual farmer has the patience, the skill, the intelligence, and the capital, to engage in a task that will require many years and much capital to bring to any considerable degree of perfection? And where would be the propriety or the economy of undertaking a work of this kind, when, by a little extra expense at the commencement, we may find the work already done to our hands?

Many farmers in this part of the country, though depending principally for their income upon their milch cows, are not aware, it is apprehended, of the small produce derived from them; and would, no doubt, be surprised on learning that their cows generally do not yield an average daily produce of more than two to four quarts of milk for the year.

The average price of milk for the year, when drawn from the cow, will not exceed three cents per quart, either for the purposes

of manufacturing into butter or cheese, or to sell in the market. Let the farmer set off the expense of keeping against his six or twelve cents a day income from his several cows, and he will see but a small chance of acquiring wealth from the income of his dairy. But let him have a stock that, with the same keeping, will yield a daily average produce of six or eight quarts of milk, and he will find the produce of his dairy, which before gave him hardly enough to pay for the feed of his cows, now affording him a net profit, which will more than meet the extra expense which he may incur in the purchase of his improved breed of cows.

It may be said that the expense of keeping the improved breed will be greater than that of the native cows. This may or may not be the case. But the question with the farmer should not be, which will require the most food? but rather, which will give the greatest net profit on what they consume? It is the greatest capacity which the animal possesses of converting her food to milk, which ought, in the estimation of the judicious farmer, to constitute her relative value.

It was with a view of introducing among our farmers a dairy stock that should, with proper care and management, remunerate, and more than remunerate, the expense of keeping, that the trustees were induced to appropriate so considerable a sum to this object.

What they have now done forms but a nucleus or starting point, from which, with the aid and countenance of a liberal public, they hope in due time to diffuse among the farmers of Massachusetts, not only an improved race of animals, but also an ambition to excel in everything that relates to this important branch of rural economy.

The breeds of cattle which the trustees believed, under all the circumstances, to be best adapted to this country, best calculated to promote the object they had in view, and to subserve the wishes and wants of the farmer, were the Ayrshire and North Devon.

The Ayrshire cows have been, for nearly or quite a century, distinguished as deep milkers, and at the same time are known to be a hardy, mild-tempered, and docile race, easily kept, with a disposition to fatten when not in milk, and having a capacity of converting their food to milk beyond that possessed by any other breed of cows in Great Britain.

The venerable Aiton, who may be justly styled the pioneer and champion of improved husbandry in Scotland, and particularly of that branch which relates to dairy stock, says: "The Ayrshires are the most improved breed of cattle to be found in the island, not

only for the dairy, in which they have no parallel, under similar circumstances, but also in feeding for the shambles. They are, in fact, a breed of cows that have, by judicious selection, cross coupling, feeding and treatment, for a long series of years, been brought to a state of perfection which fits them, above all others yet known, to answer in almost every diversity of situation where grain and grass can be raised to feed them, for the purposes of the dairy, or for fattening them for beef."

In the dairy establishment of Mr. Harley, at Glasgow, consisting of 150 cows, they were principally of the Ayrshire breed, to which he gave a decided preference over any other breed. The average quantity of milk given by the cows in his establishment, for the year, was eleven quarts per day from each.

In the famous dairy establishment kept by Mr. Rhodes, near London, of 400 to 600 cows, "he had tried the Ayrshires, to the number of 150 at a time, and by him they were highly approved—affording a large quantity of rich milk—fattening in a very short time, when they left off giving milk—and producing beef which was more highly valued, and sold for a higher price in the market than that of the Short-horns."

Aiton asserts that many of the Ayrshire cows, in their best condition, and well fed, will yield at the rate of 1000 gallons of milk in a year, or over ten quarts per day. Rankin, however, states his opinion that Aiton had given the daily average produce too high, and thinks that few herds of twenty cows or over will average more than eight hundred and fifty gallons, or about nine quarts per day. He also states that he had seen thirty-six quarts of milk drawn from a cow in one day, and that he had a three-year old quay that once for six weeks after calving gave twenty-eight quarts per day. The dairymaid predicted that "there had been o'er-muckle talk about her for only luck to come of her," and he states that she soon afterward received an injury which caused one of her quarters to become dry of milk.

The characteristic points of the Ayrshire cow, when Aiton wrote, were: "Head small, but rather long and tapering at the muzzle; the eye small, but smart and lively; horns small, clear and crooked, and the roots at considerable distance from each other; neck long and slender, tapering toward the head, and no loose skin below; shoulders thin; fore-quarters light; hind-quarters large; back straight; broad behind; joints rather loose and open; carcass deep, and pelvis capacious and wide over the hips, with round, fleshy buttocks; tail long and small; udder capa-

cious, broad and square, stretching forward, and neither fleshy, low hung, nor coarse; the milk veins large and prominent, teats short, and all pointing outward; skin thin and loose; hair soft and woolly."

This is an accurate description of the Ayrshire stock imported some seven or eight years ago by the State Agricultural Society. The improved Ayrshire stock of the present day, which are descended from the famous *Swinley* stock, and of which the recent importation by the Society consists, differ in some respects from those above described by Aiton. The head is shorter, wider between the eyes and horns, thinner in the fore-quarter; the shoulders finer and more closely set; the limbs and body shorter, and the joints more closely and firmly set; the abdomen deeper and more capacious; the udder broader, the milk veins more prominent, and the teats hanging directly down; hair longer, though more silky, and finer in the handling; and are altogether a hardier race of animals than the Ayrshires of former days.

"The colour," says Robertson, "is generally a brown of many hues, from dark to yellow, intermixed and mottled in many a varied form and proportion with white; almost none are of one colour. In a herd of forty or fifty, there will no two of them be alike in colour—in this respect exhibiting a diversity not unlike a bed of tulips, and of as many hues and shades, in an endless variety of beauty."

The North Devon stock has long been celebrated as a breed of cattle beautiful in the highest degree. For the dairy, they cannot be considered equal to the Ayrshires; but, viewing them as uniting the three qualities of working, fattening, and milking, they may be considered as unrivalled. Some of the writers upon English stock give them a high rank as milkers, and Mr. Conyers, of Capt Hill, near Epping, a district almost exclusively devoted to the purposes of the dairy, preferred the North Devons, "on account of their large produce, whether in milk, butter, or by suckling."

"The North Devon oxen," says an English writer, "are unrivaled at the plough. They have a quickness of motion which no other breed can equal, and which very few horses exceed. They have also a docility and goodness of temper, and also a stoutness and honesty at work, to which many teams of horses cannot pretend."

Such is the character given of the breeds of cattle—a bull and four cows of each—which the Society have imported with a view of improving the stock of the country;

and in order that there should be no mistake or disappointment as to the character of the respective breeds for purity of blood, and with a view of obtaining the best animals upon the most reasonable terms, the trustees decided on sending out an agent for the purpose of making the selection. And accordingly, Mr. Alexander Bickett, of Lowell, a gentleman of intelligence, and an excellent judge of cattle, who had resided for some years in Scotland, and personally known and highly respected by most of the owners of distinguished herds of cows in and about Ayrshire, was engaged in July last to proceed to England and make the purchase. Mr. Bickett had, within a few years past, attended some of the cattle shows in Scotland—had noticed the best stock, and knew where he could place his hand upon the best cattle in the country. The acquaintance of Mr. Bickett with the respective owners enabled him to treat with them upon terms much more favourable to the Society than could have been done by a stranger. The four Ayrshire cows and the Ayrshire bull selected by him, are probably equal, if not superior, to any other five cattle that could be purchased in Scotland. They are all descended from the purest and best blood of the Ayrshire stock.

In the selection of the North Devon stock, Mr. Bickett applied directly to the Earl of Leicester, from whose beautiful herd of North Devon cows he hoped to be allowed to make the purchase. When it was made known to the young Earl that the stock was wanted for the Massachusetts Society for Promoting Agriculture, he generously and very readily fell in with the views of Mr. Bickett; and, possessing all the kind feelings of his father, the late venerable Earl of Leicester, toward the people of this country, he allowed Mr. B. to select from his flock, at a very moderate price, a cow and three beautiful heifers, all in calf by one of the most celebrated North Devon bulls in the country. The Earl having no bull that he could part with, he recommended a young bull of Mr. Blomfield, which Mr. Bickett succeeded, after much importunity, in purchasing.

The cattle were all shipped at Liverpool, about the first of September last, and arrived in Boston about the first of October. They were attended on the voyage by Mr. Bickett, and with so much care and fidelity on his part that no injury happened to them, and they were in as fine condition when landed in Boston as when put on board the ship at Liverpool. The North Devon cow calved on the passage from Europe, and the three

North Devon heifers have calved since their arrival—the four calves furnishing a fine specimen of this beautiful stock.

The appearance of the cattle on their arrival in Boston was very gratifying to the trustees and all who saw them, and such as was highly creditable to the skill of Mr. Bickett, and to his indefatigable care and attention to them while on shipboard.

The cattle on their arrival were placed under the care of the subscriber, at his farm in Lexington, where the public are respectfully invited to call and view them.

From the American Quarterly Journal.

On the Adaptation of Farming to Circumstances.

AN article which appeared in the April No. of your Journal* has arrested my attention, on the impossibility of the East offering any competition to the West in the ordinary products of the farm, and if I had time, I should take pleasure in investigating the matter at large, in some important points which I think the author of that communication has neglected. The fact is a very important one, that farmers in the middle and eastern States are wasting their energies, and throwing away their resources, in the hopeless effort to produce the same articles that are grown in the new States, and to sell them in their own markets at a price which will *pay the interest* on the value of their land—then, the *expense of cultivation*—and lastly, the cost of *getting them to market*—and after all this, yield a *fair profit*. These four particulars must strike you, as they perhaps often have, as obstacles of no small magnitude in the way of the eastern farmer.

The greatest of them is unquestionably the first, and is fairly and satisfactorily examined, quite at large, by your April correspondent, Col. T. J. Carmichael. In fact, he has done justice, as far as possible in the short space he employs, to all these hindrances, and it really strikes me that if our farmers would now "*think on these things*," a change of immense magnitude would be brought about.

It seems to be a settled conviction in the minds of all our agriculturists now-a-days, that if a farmer does not grow a certain article for the market, yet, if he is a consumer of that article, he must at least grow as much as he consumes. No idea can be more false, nor founded upon more fallacious grounds, as may be shown in very few words, not in

the shape of argument, but appeal to every man's own practices in his pursuits. It would be considered very ridiculous for a farmer to tan his own hides, and make his own shoes, simply because he is obliged to wear them. There was a time when our farmers' wives carded and spun, and wove, oftentimes, the materials for their husband's coat and pantaloons. But they did it because they were obliged to, and because they could do it cheaper than they could buy the materials. There are few or none who do this now, and they would be set down as possessed of little prudence or economy if they were to do it. They would be throwing away their time, which could be employed to better purpose. They would be throwing away the materials, which they could sell for more, in proportion, than they are worth in their homespun fabric. They know they can sell the material, and employ their time and labour in the production of other things, which will purchase the clothing they used to manufacture, and will leave them a handsome profit. This is a view of the case perfectly on a parallel with the farmer who continues to raise, at the present day of universal and far-reaching competition, an article of food simply because he is a consumer of that article. He is infinitely more foolish who grows an article *for market*, when he can buy it cheaper than he can grow it, or can raise an article which he can barter for it, at a large profit. As well should the cotton manufacturer be also a manufacturer of linens, and woollens, and silks, only because he wears shirts and pantaloons, and his wife and daughters wear dresses of the latter material.

Must you sow no wheat? Not a bushel. No rye? None. No corn? No, nothing that another can raise cheaper than you, while at the same time you can raise on the same amount of land anything else which will purchase all you want of these and leave you a profit. If you do, you show a lamentable want of foresight, and it is not to be wondered at that you are not making money, and that your farm is getting behind hand. You need not run away to the West to avoid the evil, as so many have already done. You have the ability—the skill—all but the enterprise—to revolutionize your business and put yourself at once in the way of becoming a rich and thriving farmer. And how? That is the question we are about to answer, and we hope to do so in a way to open your eyes to the truth.

The products of a farm must be adapted to the peculiar circumstances under which it is situated—its value in money—its contiguity to, or remoteness from market—the

* See last No. of the Cabinet, page 62.

cost of growing, and the price in market, &c. And here is the point where our leading, or would be leading men in agriculture, have missed the mark. I have already made it sufficiently manifest that, because a man owns a farm and cultivates it, is no reason why he should raise every product which will grow under his latitude. Better by far would it be for him, if he would grow some one product which would pay him.

The character of the soil—its chemical and mechanical properties, are important to be known and understood, but the character of the market is a matter of greater moment. By the proper application of manures, and good cultivation of the soil, a man utterly unversed in the science of the thing, may gather large crops and remunerating ones, if he has an eye to the market he is to sell in, otherwise he will find it a losing game. It should be the object of leading men, to show the practical farmer the true extent and the proper bearing of his resources, before anything else. If, in the State of New York, the same efforts had been made to induce farmers to adapt their labour and skill to the circumstances under which they live, that have been made to induce them to become scientific men, we should now probably see a large part of the State a garden, compared with its existing barrenness. There has been too much loose and indefinite and unpointed direction to the business of farming, for a few years past. Instead of pointing out distinctly the direction in which the labour of the farmer can be applied so as to be most productive; instead of investigating dispassionately the condition under which the farmers in the different parts of this widely-extended country are placed, all efforts to improve his position and to advance the art have been a sort of vague inducement to him to try to increase and improve himself in the production of those very articles in the production of which he has to compete with new soils and cheap lands, and every other disadvantage. It appears to me that the first step to make our farmers improve, should be to persuade them to give up the growing of such articles, and enter upon the cultivation of such as they have a manifest and real advantage in. And what are these articles?

In answering this question, I might enumerate a long list of what may be called *perishable* products of the soil, which I think will exclude all our grains, and the growth of wool, and in connection with them I would also include the raising and fattening of animals for the butcher, and perhaps, collaterally the growth of the mulberry and the raising of silk worms. I say collaterally, because

I think this business may be made profitable to the farmer, as a secondary occupation for his family during hours which they can readily spare for the care of worms, without interfering with other avocations, and that in at least some cases, it may be a valuable addition to the labour of the farm to fill up actually vacant time, when the farm is devoted to such objects of culture as do not fill up the whole time. Such will be preeminently the case in the instance of farming under the necessity of circumstances which I am about to mention, and which it strikes me is the species of farming adapted to the Hudson river valley, and the other great valleys and thoroughfares of this eastern part of this continent, which have ready—easy—and rapid communication with the great markets of the country, and especially with foreign markets. But I am an Orange county man, and I am looking now principally at the interests of the river valley in which I live. If my views appear to those farmers who live in other sections as applicable to their condition and circumstances, it is the easiest thing in the world for them to apply the suggestions, which I can assure them they are fully welcome to, with the wish that they may profit by them.

I have spoken of regulating farming according to the circumstances in which a farmer is placed. In this I will not include the character of his soil, for he may make his soil what he pleases. Yet this might be, and actually is a circumstance of considerable importance. But I shall have special reference to the farmer's proximity to market, including of course the value of his land and the cost of producing. And these circumstances alone should demand a serious consideration in the mind of any man who makes the Hudson river the means of transporting his produce to the market in the city of New York. It has been demonstrated, I think, that he can not grow wheat and offer any reasonable competition to the West. He may live by raising it, and that he could do if he had no market. But his object is to sell and make money, and he should not be content to do this at a disadvantage. What then shall he grow?

I must divide my answer in order to suit my circumstances. And in the first place a large portion of the early vegetables which are consumed in the city of New York are brought from a great distance, compared with many places on the river, where they might be grown to advantage. There is scarcely a little village, or landing place, which has not its market vessels, running a week or oftener, to market with the products of the neighbourhood. Whenever,

then, the place is in such proximity to the city that vegetables can be gathered in the afternoon and sent to market by daylight next morning, a considerable portion of the land and the industry of the inhabitants should be diverted to the growth of such articles as are now raised in the gardens about the city, to be sold as green vegetables.

I know that some will open their eyes in alarm, and tell me at once that I will have the market glutted and the produce all thrown into the river. I will have no such thing. A contingency of this kind may happen, that if all were to enter upon this branch of husbandry at once, the first year might exhibit a glutted market, for the population of our large cities are not prepared for a sudden expansion in the quantity of any article of food. But as soon as it is ascertained that the amount in market is greater, and for sale cheaper, the demand will be increased, and prices will again become firm and profitable. The fact now is, that far less of wholesome vegetables, in the spring of the year, find their way to the large cities than the health of the population demands, and with the health are implicated still more important considerations, of morals, &c. A vastly increased quantity might be consumed, and would be, if it were to become so plenty as once to become more necessary than it now is. The city of New York now depends for its usual supply of fresh vegetables for its vast populace, upon the few acres of ground cultivated for this purpose in its immediate vicinity. It is capable, with advantage, of absorbing a much larger amount, and it would afford a profitable and endless market for thousands of acres of land within sixty miles.

Again, the supply of articles for winter food, is gathered from all parts of the country. The production of these is not even confined to the State, but they are brought from the far West, and with all the apparent abundance there is actual need for more. When we see the single article of potatoes alone, brought from all parts of this country not only, but even imported from Ireland and France, we ought to be stimulated to greater energy in our agricultural affairs. If the fields in the Hudson valley, now bearing a profitless and foolish harvest of wheat and rye, were planted with this great staple, as it may be called, the growers would find their pockets heavier after they send their produce to market this fall. But I have what appears to me a far more important and profitable article to mention, and that is *fruit*. The raising of fruit for the supply of our great markets at home is

a business of no little consequence, and it is not half done. Half do I say! The beginning is hardly made. Look for a moment at the quality of fruits with which the markets are supplied. They are by no means of the best character. Thousands of barrels of poor fruit are every year sold and bought in the city of New York alone, because the purchasers can get no better. Good fruits are always saleable. The market is never glutted with them. There is never enough. I have heard Doctor Underhill, of Croton Point, relate his experience in the cultivation of the grape for the New York market. His friends endeavoured to dissuade him from going so largely into the enterprise, for fear of glutting the market. But he was too farseeing for that; and he has not been disappointed, the fact being known that good grapes could be had, and there are not yet enough to supply the demand, though the doctor sells many thousand dollars worth every year. The people only want to know that they can get good fruit, and it seems as if the more you send to market, the more is wanted. There is no such thing as glutting the market now-a-days. Suppose our large cities will not consume all: suppose such a thing to happen; what will be the consequence? Simply this: the communication with Europe is so speedy now, that many fruits deemed now too perishable to send so far, would be exported to England and other countries in a fine state of preservation. To some of our good fruits the market of the world is open, and the quantity to be consumed is unbounded.

I wish therefore to call the attention of farmers on the Hudson river, every one of them, to the cultivation of the best fruits they can raise. There is no sort of danger of overdoing the matter. The whole river valley would not grow more than can readily be sold, and no crop can be raised which is so profitable. The objection urged by many that trees are slow in growing, and that it will be a number of years before they become productive, is no argument against me. The difficulty may be obviated in many ways, which will suggest themselves to the mind of any thinking man; as by going gradually into the business; by growing those kinds which come soonest to maturity, and soonest fail, in the intervals of those kinds which are intended to form the permanent orchard; or by connecting with the business some other kind of husbandry, which becomes immediately profitable. In any of these ways, and in others which will suggest themselves, the difficulties may all be obviated.

I know of no branch of husbandry which can be so profitably connected with fruit

growing as the silk business. I can not enter into its consideration at large, here, but I will say that while his fruit trees are growing, the farmer will find it profitable, and afterwards he can give it up to his wife and children. I hope to say more about this hereafter, and also something in reference to the duties of young farmers in entering upon this business. I shall feel gratified if I have been the means of opening the eyes of any one to his interest. The truth is, agriculture on the Hudson river will never pay as it ought, till it is conducted with strict reference to circumstances. And I am satisfied that here fruit growing offers decidedly the greatest profit.

Yours, AGRICOLA.

Newburgh, July 4th, 1846.

Although the foregoing remarks are written by an "Orange County man," and would seem more particularly adapted to the operations of the farmer in the valley of the Hudson, yet it will be found that every one on the Atlantic border, and within reach of the markets of the great cities of Boston, New York, Philadelphia, and Baltimore, may pore over them with profit. We have, over and again, from time to time, inculcated similar views in the Cabinet, and it is with particular satisfaction that we give them a place, as the subject is so well handled. Let our friends in Jersey,—which lime, marl, and good farming, have made a garden spot—see to it. Nature has placed her and Delaware contiguous to three of the best markets in the country, and given to them soils particularly adapted to the production of perishable articles, always needed in quantities that will be increased by the supply. Their railroads and steamboats place them within a very few hours' travel of those cities, and beyond the reach of competition of the cheap and fertile lands of the West, so far as these small but almost infinitely numerous perishable commodities are concerned. Where, in the whole country, are there districts so eligibly situated, and so eminently blessed with just such soils as they need, as are New Jersey and Delaware? but their farmers must not be longer content to tread exactly in the path their fathers trod in: they must think, and suffer their reflections to lead them into pursuits adapted to the situation they find themselves in, so different from that of their fathers. Active business men must yield to circumstances, and they must watch every movement around them. If the shipping merchant finds the trade which he and his fathers have prospered in, superseded by those who can supply it cheaper than he possibly can, he must turn his vessel in another direction. So because we have been successfully raising wheat, and fattening cattle, it does not follow that it is sound policy to cling to it, when others can supply these articles cheaper; particularly when there is so wide and so promising a field open before us in another direction.—Ed.

Potatoe Rot.

In the same garden, last spring, were planted two patches of potatoe, having only

about a two feet path between them. The soil in which they were planted is what is called "red shell." The situation of the ground, the time of planting, the kind of potatoe, the cultivation of the soil and plant, &c., were in both patches the same; neither, so far as we can discover, was there any difference, except in the manner of planting; and yet one patch is greatly injured by the "rot," while the other does not possess the least semblance of disease; but, on the contrary, we have a fine crop of solid, healthy potatoes. This difference we attribute altogether to the presence of lime. After the potatoes were planted, a layer of manure was placed upon them, and in that patch where the "rot" has not appeared, a layer of slacked lime was placed upon the manure, after which they were covered with earth. So that one patch had manure, and the other manure and lime. And there is no cause to which we can attribute the preservation of the crop, that we can conceive, except it be the lime.

We account for it on this principle. The disease, I apprehend, is generated by the sudden changes in the season, and the cure is effected by the prevention of their effects upon the plant. These sudden changes have been very prevalent for the last few years. A spell of dry, hot weather, rapidly absorbs the moisture from the earth, and thus checks the growth of the potatoe; for potatoes will not grow where the ground is dry and hard. Now comes a heavy rain, the potatoe starts growing, the temperature of the soil is suddenly changed, and disease is generated. But lime is a good preventive. While the manure nourishes the plant, the lime during and under the influence of the dry weather, becomes somewhat hard, forming a kind of crust, thus preventing the moisture beneath from evaporating, and the potatoe is kept constantly growing; there being always sufficient moisture retained for that purpose. Again, during a heavy rain, the lime absorbs the water, becomes saturated, throws out its latent heat, and thus checks any sudden change in the temperature around the potatoe. So that by keeping up an even temperature and due degree of moisture, the potatoe continues healthy and fruitful.

Moreover, if it is a fact that worms breed in the potatoe vine, methinks lime will prevent it; because the substance of the lime penetrating through the whole plant will destroy their influence, the same as it does upon cucumbers. In my opinion, if the potatoe is kept in a growing, healthy state, subject to the penetrating influence of lime, no worm nor disease will appear. We state

this fact for the benefit of the public, and as the remedy is a simple one, within the reach of almost every farmer, it is certainly worthy of receiving a fair trial.—*Ledger*.

Overgrown Wheat and tender Straw.

SOME highly cultivated farms, where dung only is used as a dressing, having attained an average of about five quarters wheat per acre, and finding it subject to lay from overgrowth, it is proposed to check this overgrowth by burning or other means of reducing the richness of the soil, thus something like limiting the produce to about five quarters per acre, a limit within that of cottage gardens and allotments, and which has been doubted even under the plough. Surely, then, there is room for trying other means of stiffening the straw and promoting the formation of grain, before taking measures to check the fertility of the soil. Salt is well known to produce both these effects; the wheats on our sea-board being noted for heavy ears, and thin stiff straw; and wheat will bear much salt, Johnson—not Johnstone—says 10 to 20 bushels per acre. Mild lime produces a like effect, but not caustic lime, on rich soils, where it can liberate ammonia. To check the overgrowth, therefore, and increase the grain, 10 or 12 bushels—say six to seven cwt.—of salt, with twice as much mild lime, where required, might be harrowed in upon the seed, or perhaps better top dressed on the young plant in spring, especially if winter proud; superphosphate of lime should conduce to the same result, its acidity retarding the stimulative action of ammonia on vegetation, and its phosphorus determining to the formation of grain; two cwt. per acre might be mixed with the salt, varying the quantities experimentally, on the small scale, as a guide, and eventually we may hope attaining a stiff straw under crops much heavier than five quarters per acre. Special manuring is particularly applicable to cases of this kind; but my impression is that almost every crop might be improved by special top-dressing in its early growth. Alkaline silicates have a direct tendency to harden the stalk, but silicate of potash appears, from the experiments on record, to promote the growth of straw; of silicate of soda, which costs less, I have seen no reports; it might be tried at the rate of one cwt. per acre, mixed with the dressings above, but would be safest on quite a small scale.—*Agricultural Gazette*.

INFORMATION RESPECTFULLY DESIRED.—As Chairman of a Committee, appointed at the meeting of the Farmers' and Gardeners'

Convention, at New York, in October last, "to collect information," the undersigned respectfully requests the Secretaries of all Agricultural Societies and Farmers' Clubs in the United States, to address to him a note, stating the locality of the Society, and the names of the President and Secretary.

The list, when completed, will be printed, and a copy sent to each Secretary. The object is to establish the means of correspondence, and interchange of information and views, for the better protection of the rights, and more efficient improvement of the practice, of agriculture.

Agricultural and other editors are respectfully requested to give this one insertion. There are nearly six hundred such Societies and Clubs in Great Britain, all well known to, and in correspondence with each other.

J. S. SKINNER, New York.

The Profits of Farming.

THE following is transcribed from the leading article of your *Gazette* of the 25th ult:—

"You and I cultivate adjoining acres of equal quality; you raise 30 bushels on your acre by better management and skill and knowledge than that which enables me to grow but 25 on mine. At 6s. a bushel, you will make more money than I shall by selling mine at 7s. Teach me but your mode of farming, skilful neighbour, and with an odd mark of 40 acres I shall jog home from the market, where wheat is selling at 48s. a quarter, a 'better man' by £10 than I now do after selling at 56s. Sure never was paradox more susceptible of arithmetic! Let the grower of 20 bushels an acre add but four bushels to his produce by a small accession of skill and knowledge, and he will make more money at 6s. a bushel than he made before at 7s."

You and I shall be, for the sake of explanation, respectively called A. and B. A. therefore grows 30 bushels per acre; B. only 25 on 40 acres of land of similar quality. Why does A. grow the extra quantity of five bushels per acre on his 40 acres of land, making in all 200 bushels? Not by a "small accession of skill and knowledge" only, but because he has expended capital with skill and knowledge, and brought his land from a state of nature to a fit state of cultivation, expended additional money again in the cultivation of his crop by keeping down weeds, the natural produce of the soil; and also additional money in reaping, harvesting, and thrashing the extra bulk of corn grown on his land to that grown on his neighbour B.'s land. Would it not be fair,

then, that A. should expect, on the sale of his crop, to obtain more money than B. He would be the loser if he did not; yet if he sells his corn 1s. per bushel cheaper than B., he would not realize so much as B., as I shall endeavour to show. A.'s 40 acres of land must, in the first instance, be drained at an expense of £4 per acre, making £160.

Interest on £160 at 10 per cent.	£16	0s.	0d.
Additional expenses of tillage, hoeing, and weeding, at 5s. per acre	10	0	0
Additional expenses of reaping, harvesting, and thrashing, at 2s. 6d. per acre,	5	0	0

Making,	£31	0	0		
Extra expense of the year's cultivation of A.'s 40 acres of land, and for which he obtains 900 bushels of corn more than his neighbour B., which he sells at 6s. a bushel, making	60	0	0		
Deduct extra expenses of cultivation as shown	£31	0	0		
Market expenses, and delivering 900 bushels or 25 qrs.	2	10	0—33	10	0

In favour of A. if he sold his corn at the same price as B. £26 10s. 0d.

But B. sells his corn at 1s. a bushel dearer than A., and grows on his 40 acres of land 1000 bushels; B. therefore obtains for his produce 1000 shillings, or £50 more than A. would on a like quantity.

Which, then, has done best by his crop; A. who, by his good cultivation, capital, and skill, has produced the larger crop, or B. who has not applied any extra capital, skill, or knowledge, but has obtained for his corn 1s. a bushel more than his neighbour A.?

The account will stand thus:

B. produces 1000 bushels at 7s.	£350	0s.	0d.		
A. produces 1200 at 6s.	£360	0	0		
Deduct A.'s extra expenses of cultivation and marketing, as shown	£33	10	0—326	10	0
Balance in favour of B.	£23	10	0		

It may be, and is, true that extra capital, skill, and knowledge, will employ more labour, and produce more corn, both of which may be for the general good; but it is not true that it ought to enable the producer to sell at a lower price. Skill and knowledge ought to be paid for, and, independently of his extra capital applied, A. is entitled to expect a higher remuneration than his less skillful neighbour B., which, however, he does not obtain, because in "trying to reduce prices," he has overlooked the extra cost he has incurred in producing the larger crop, which oversight must sooner or later reduce his capital, which is as necessary to successful cultivation as skill and knowledge.—*Gardeners' Chronicle*.

Hay Making.

A very pretty specimen of rapid hay gathering is detailed below by R. L. Fell, a well known farmer of

New York, in a letter dated the 18th of July, directed to the President of the American Institute. We copy from the *Farmer and Mechanic*.

To have struck into a field of thirty acres of timothy on a Second-day morning, that would yield two and a half tons to the acre, and have had uninterruptedly fine weather till the close of the week, when 75 tons, sweet and fresh, were found to be in the mow, was capable of yielding no trifling amount of satisfaction to the thrifty farmer. The gathering of good crops of grass and grain, in fine weather, is really delightful. There is no part of the farm duties more calculated to bring out a man's good humor, and to make him feel pleased with himself and his labours. He is sailing on a smooth sea, and every breeze is blowing fair. We should like to have followed the revolving horse-rake, or to have handled the fork in this lot.—Ed.

On Monday morning, the 6th of July last, at half past four o'clock, I commenced cutting a thirty acre field of timothy grass, and on Saturday evening, the 12th, at seven o'clock, the contents of the field, 75 tons, were stowed away in my barn for winter consumption, and I can assure you, that it is in as perfect order as the sample now before you—presenting to the eye the same green appearance, which it will retain for years if kept from light, with all its saccharine qualities unimpaired.

I employed seven men and one boy, who alternately mowed, spread, loaded the wagon, drew in, stowed away, etc.; immediately after the grass was cut, it was spread as thin as possible over the field, and was turned once before noon. At one o'clock it was raked into windrows and cocked; at two o'clock the wagon commenced drawing into the barn, where it was packed and cured with half a bushel to one bushel of salt per ton. At evening, all the grass cut before three o'clock was drawn in and stowed, retaining all the nutritious qualities required to form flesh, bone, muscle, and to promote growth in the animal to be fed on it—having lost only 14 per cent of water, which was replaced by salt. In fact, therefore, my hay is as heavy as it was when standing in the field, or nearly so. The salt draws out the water, which passes off by evaporation, and takes possession of the pores, adding to the weight of the hay, and curing it on the same principle as it does pork or beef. I am very respectfully, your obedient servant.

TO DESTROY ROACHES.—Mix a tablespoonful of red lead and Indian meal, with sufficient of molasses to make a thick batter, and place the mixture at night on a plate or piece of board on the hearth, or in the closet frequented by these vermin. They will eat it, and be poisoned by it.

List of Premiums of Philadelphia Agricultural Society.

NEAT CATTLE UNDER TWO YEARS OLD.

The committee appointed as Judges of neat cattle, under two years old, after having carefully examined the different animals submitted to their view, do award the following premiums, viz:

For the best Ayrshire bull, between one and two years old, to George Blight, for Ayrshire, \$4.

For the best Alderney bull, between one and two years old, to P. Physick, for Sir Robert Peel, \$4.

For the best Durham heifer, between one and two years old, to James Gowen, for Isabella, \$6.

For the next best do. do., to Dr. J. Rhea Barton, for Kate Clover, \$3.

For the best Ayrshire heifer, between one and two years old, to George H. Thompson, for Effy, \$4.

For the best heifer, of mixed breed, between one and two years old, to William Blackburn, for Belle, \$4.

For the next best do. do., to George Martin, for Fairy, \$2.

For the best Durham bull calf, between four months and one year old, to John G. Palmer, for Seneca White, \$2.

For the best Devon bull calf, between four months and one year old, to Morris Longstreth, for Porter, \$2.

For the best Durham heifer calf, between four months and one year old, to James Gowen, for Miss Prim, \$2.

For the best Devon heifer calf, between four months and one year old, to Morris Longstreth, for Fanny, \$2.

For the best heifer of mixed breed, between four months and one year old, to John G. Falmer, for Darby, \$2.

JOHN M. GEORGE,
DENNIS KELLY,
JOHN JOHNSON.

Philadelphia Co., Sept. 30th, 1846.

NEAT CATTLE OVER TWO YEARS OLD.

The committee on cattle over two years old, report—that after having examined the cattle presented to them, they award the following premiums:

For the best Durham bull, over three years old, to Col. K. Smith, for his bull Malcolm, \$10.

For the next best, to Philip Garrett, for Glenroy, \$5.

For the best Durham bull, between two

and three years old, to William Webster for Chance, \$8.

For the next best, to C. S. Smith, for Kempton, \$4.

For the best bull of Devon blood, to William Blackburn, for Governor, \$8.

For the next best, to Judge Longstreth, for Doctor, \$4.

Ayrshire and Alderney bulls—none offered.

For the best Durham cow over four years old, to Mr. Gowen, for Miss Model, \$8.

For the next best, to Mr. Gowen, for Ellen Kirby, \$4.

For the best Durham cow, between two and four years old, to Samuel Overn, for Miss Lucy, \$8.

For the next best, to Mr. Gowen, for Bessy Bell, \$4.

Durham heifers between two and three years old—none offered.

For the best heifer of mixed breed, between two and three years old, to Samuel Cooper, for Lady Jane, \$4.

For the next best, to Jacob Serrill, for Rose, \$2.

For the best cow of Devon blood, to Judge Longstreth, for Rosa, \$6.

For the next best, to Owen Sheridan, \$3.

For the best Ayrshire cow, to George H. Thompson, for Ayrie, \$6.

For the best Alderney cow, to Philip Physick, for May Flower, \$6.

For the next best, to C. S. Smith, for Cynthia, \$3.

For the best cow of mixed blood, to Samuel Cooper, for Fair Hellen, \$4.

For the next best, to C. S. Smith, for Fanny, \$2.

For the best cow of native breed, to George Martin, for Carey, \$4.

For the next best, to George Martin, for Strawberry, \$2.

For the best yoke of working oxen, reference being had to their performance, to Mr. Blight, \$10.

No fat ox, or steer, or heifer offered.

Many very fine Durhams were exhibited by Mr. Gowen, in addition to those to which premiums were awarded—among them his bull Bruce, and cow Cleopatra—the latter of which was by the rules excluded, having heretofore been honoured with the Society's highest premium.

The Judges are also pleased to observe a considerable improvement in the Devon breed exhibited.

Some fine cattle of the mixed and native breeds were exhibited by S. S. Richie and others.

The committee have to express regret that the number of cattle exhibited was

much smaller than on former occasions, and call on farmers and others, not to relax in their exertions to make these periodical exhibitions interesting, by sending their stock.

THOMAS S. WOODWARD,
HENRY CHORLEY,
DAVID GEORGE.

ON HORSES.

The undersigned, a committee appointed by the Society for the Promotion of Agriculture of the County of Philadelphia, for the examination of horses, respectfully offer the following report:

For the best thorough bred stud horse, they award to Mercer, property of James Hammel, first premium, \$10.

Next best—none offered.

For the best stud horse adapted to field or road, they award to John Consul, property of W. Cottman, the first premium of \$8.

For the next best do., to Prince Albert, property of W. Cottman, a premium of \$4.

For the best thorough bred brood mare, to James Hammel, for his bay mare Stella, they award the premium of \$8.

Next best do.—none offered.

For the best mare, adapted to field or road, to the bay mare Nelly, property of Manuel Eyre, the first premium of \$8.

Next best do., to S. S. Richie's brown mare, Jenny Blackburne, premium of \$4.

For the best horse colt, between two and four years old, to Perry's Victory, sired by American Perry, Sr., property of J. Michenor, first premium of \$6.

For the next best do., to Alfred, property of W. Blackburn, a premium of \$3.

For the best filly or mare colt, between two and four years old, to Cornelius S. Smith, for his sorrel mare Fanny, first premium of \$6.

For the next best do., Fairy, property of Owen Sheridan, a premium of \$3.

For the best filly or mare colt, between one and two years old, to Caleb Haines, for his roan filly, by Edward Harris's Norman horse Diligence, they award the premium of \$4.

A. L. ELWYN, *Chairman*.
ABRAHAM R. CULP,
N. R. WOODWARD, of Md.
W. W. W. BOWIE, do.

AGRICULTURAL IMPLEMENTS AND PRODUCE.

The committee on Agricultural Implements and Produce, having examined the different articles under their notice, beg leave to report:—In fulfilling their duties they have found it very difficult to decide

as to the relative merits of the different articles. They award the following premiums:

To Gattling's Patent Wheat Drill, first premium, \$4.

To D. O. Prouty's next best do., second premium, \$2.

To D. O. Prouty's best Straw Cutter, first premium, \$4.

To D. O. Prouty's second best do., second premium, \$2.

To Mr. Urmer, best Straw and Corn Cutter, first premium, \$6.

To Mr. Urmer, second best do., second premium, \$3.

To E. Chandler, best Corn Sheller, first premium, \$4.

To D. O. Prouty, second best do., second premium, \$2.

To E. Chandler, best Wheat Fan, first premium, \$4.

To D. O. Prouty, second best do., second premium, \$2.

To D. O. Prouty, best display of Agricultural Implements, \$10.

To E. Chandler, second best do., \$5.

For Birkindine's Water Ram, a premium of \$3.

For C. H. Farnham's do. do. \$3.

For white Mediterranean wheat, to James Taylor, Bucks county, \$3.

For red do. do., to J. C. Ford, \$3.

For do. do. do., second best, to J. Newton, \$1.

For Flint corn, to Morris Longstreth, first premium, \$2.

For the best mixed do., to Isaac Newton, first premium, \$2.

For the second best do., to C. W. Harrison, second premium, \$1.

For the best Oats, to J. S. Huber, first premium, \$2.

For the best Mercer potatoes, to J. Whartenby, first premium, \$2.

For the second best do., to J. C. Ford, second premium, \$1.

For the best Agricultural display, to G. Blight, \$3.

For very fine display of Apples, twelve varieties, to A. Cornell, \$3.

For Floral horse and plough, to Robert Henry, gardener of G. Blight, \$3.

For an elegant display of agricultural products of field labour, from Mr. Charles P. Duval, of Germantown, the committee award a complimentary premium of \$3.

MORRIS LONGSTRETH, *Ch'n*.
SAMUEL WILLIAMS,
JESSE GEORGE,
THOMAS S. DAVIS,
ROBERT T. PORTS,
G. EMERSON.

SWINE AND SHEEP.

The committee on Swine report, that after carefully examining the entire herd presented for exhibition, they award the first premium to Godfrey Hague, for the best boar, \$4.

For the next best, to John Jones, \$2.

For the best boar, over six months and under one year old, to James Esray, for his boar J. O. E., \$4.

For the next best of the same age, there was no competition.

For the best sow, of Chester county breed, to George Blight, \$4.

For the second best sow, to G. Blight, \$2.

For the best sow over six months and under one year old, to Philip Garrett, \$4.

For the second best of the same age, there was no competition.

For the best boar pig, between two and six months old, to Philip Garrett, \$3.

For the next best, to the same, \$2.

For the best sow pig, between two and six months old, to Philip Garrett, \$3.

For the second best, to the same, \$2.

For the best five pigs, under two months old, to Reese Pyatt, \$4.

For the next best of the same age, to Jacob Whartenby, \$3.

The committee cannot but commend Philip Garrett for the spirit which he manifested in bringing his Stag Billy to the exhibition for display.

The committee were also much gratified with the fine lot of pigs, of the Chester Co. breed, displayed by Samuel Woodward.

The same committee beg leave respectfully to offer the following report on sheep.

It is considered a matter of regret that so few sheep were offered for exhibition.

For the best Leicester buck, the committee award to Aaron Clement, \$4.

For the next best, to George Martin, \$2.

For the best Southdown buck, over one year old, to Aaron Clement, \$4.

For the next best, to Aaron Clement, \$2.

For the best improved buck, of mixed breed, over one year old, to Aaron Clement, \$2.

For the four best ewes, over one year old, to Aaron Clement, \$4.

For the second best there was no competition.

Mr. Isaac Newton exhibited two very fine ewe lambs, of mixed breed, of which there was not a sufficient number to compete for a premium.

All of which is respectfully submitted.

JOHN LARDNER,

DAVID WHITALL,

ANTHONY T. NEWBOLD,

Committee.

PLOUGHS AND PLOUGHING.

First premium for ploughing; to Croasdel Warner.

Second do., to Samuel Cox.

First premium for ploughs, to Mr. Prouty.

Second do., to B. Wiggins.

BUTTER AND POULTRY.

The committee award the first premium for fresh butter, a silver butter knife, the value of \$5, to Philip Physick of Germantown; the second premium of \$3, to John Johnson, of Lower Merion. The butter exhibited fully sustained the character of Philadelphia county, in the production of that article. That for which the first premium was awarded, is judged by your committee to excel any heretofore produced.

The committee award to Samuel C. Ford the premium of a silver butter knife, of the value of \$5, for a jar of salted butter of a superior quality, made in the month of June, and retaining all its original sweetness and flavour. The committee award a premium of \$2 to Joseph Davis, of New Jersey, for the best pair of Jersey Blue fowls. To A. T. Newbold, of Bridesburg, a premium of \$2, for the best pair of improved breed of fowls. To J. S. Huber, the second premium of \$1, for the second best pair of improved breed of fowls. To A. T. Newbold, the premium of \$2, for the best pair of capons. To Philip Physick, of Germantown, the premium of \$2, for the best pair of turkeys. To William Blackburn, the first premium of \$2, for the best pair of ducks; and to Philip Physick, of Germantown, the premium of \$1, for the second best pair of ducks. Which is respectfully submitted.

SAMUEL C. FORD,

ASHER MOORE,

CORNELIUS J. SMITH,

GEORGE BLIGHT.

Sept. 30th, 1846.

Isaac Newton furnished the Society with Ice Cream at their dinner, for which the Society awarded him a complimentary premium of \$10.

Report.

To the Philadelphia Society for Promoting Agriculture:—

The committee of arrangement appointed in May last, to prepare for holding the Annual Exhibition of the Society at the Rising Sun Village, on the 30th of September and 1st of October, offer the following report:—That in pursuance of notice given, the exhibition was held at the time and place mentioned. The exhibition of animals, in con-

sequence of the extreme drought and dusty condition of the roads, was not numerous, but generally of excellent quality.

A very respectable number of horses of the different breeds, were on the ground. Many of them were high bred, and others displayed excellent qualifications for coach and road horses; and some cross breeds, well adapted to the use of the farmer.

The display of Durham cattle was more limited than on former occasions; but their quality, size, and beautiful appearance, attracted the notice of visitors, and it must be acknowledged by all, that they are entitled to a great share of credit, for the interest manifest on the occasion.

The Devons were well represented, and their appearance attractive. There was a few Ayrshires and Alderneys of good quality, and some cows and heifers of mixed and native breeds. Also some good calves, the progeny of the above. Showing that a laudable spirit still exists among farmers, for the improvement of stock, according to their preference for any particular variety.

With regret the committee are obliged to state, that but one pair of working oxen was to be seen on the ground; they were of fine size, superior form and quality, and perfectly tractable, and were attached to a cart containing a variety of farm products. Your committee would recommend to farmers the more general use of those valuable animals, as being more economical than horses, and for many purposes more convenient and efficient.

But few sheep were on the show ground; they were mostly of Southdown and Leicester blood, of the best quality, and attracted much notice.

There was a good collection of swine, and their appearance creditable; they consisted generally of the Chester county breed, and their crosses, some of the mixed, Hampshire, Lincoln, and Berkshires, were of good quality.

The exhibition of poultry was more numerous and various than on any former occasion, and evinced an increasing spirit of emulation among their breeders.

Samples of fresh butter of superior flavor were produced; and also a jar of salted butter of excellent quality, the first of the kind exhibited before the Society.

The display of machinery and farming utensils was large and very interesting; showing that our ingenious mechanics are untiring in their efforts to accomplish a reduction of the labour and expenses of cultivation.

Some good samples of different varieties of wheat, oats, corn in the ear, &c., were

to be seen; but the display of roots, the committee regret to state, was very deficient in quantity, and they would beg leave to recommend their more general cultivation by farmers for the use of their stock in the winter season.

Your committee having obtained and prepared some ground for ploughing, by staking off the proper allotments for each competitor, the trial of ploughs and ploughing took place on the second day of the exhibition. The ground, from the long drought, was rendered so hard, that any attempt of the ploughman to force his way through it seemed almost hopeless, but as farmers always have shown good courage on the field, a determination was manifested to make the attempt, and contrary to the expectations of most present, the work was done in a reasonable time, and in a manner that displayed to the large concourse of people the great skill of the ploughmen, and the superior quality of the ploughs entered for competition.

It was pleasing to notice competitors from the neighbouring counties, and some from the State of Delaware, who had honoured the Society with their presence on former occasions.

In a short time after returning from the plough field, the different committees having prepared their reports, a large concourse of persons assembled around the stand on the show ground, where the chairman of your committee announced the premiums awarded to the successful competitors.

Excellent dinners were provided by Mr. Hamill, on both days of the meeting, and the Society was honoured by the presence of many distinguished guests, among whom were H. B. M. Consul at Philadelphia, Mr. Peter, Hon. Charles B. Calvert, Col. H. Capron, Col. W. W. W. Bowie, Dr. Thomas, and Mr. Woodward, of Maryland, Bryan Jackson, Esq., of Delaware, and John Gill and David Whittall, Esqrs., of New Jersey. Some excellent speeches were made by Mr. Peter, Col. Bowie, and others.

The plan adopted on the present occasion, of disposing of animals by private, instead of public sale, proved highly successful. Many sales were made at fair prices. This circumstance will offer inducements to many farmers to bring out their best stock for exhibition and for sale; and a fair or market may be established that will bring persons from a distance, and prove to be most convenient and advantageous to all parties.

The committee are happy in stating that the exhibition throughout was conducted in the most orderly manner, and passed off in such a way as to be highly creditable to the

Society; and they feel assured, that with a harmonious combination of the members, and a determination to come out on future occasions with all their force, their exhibitions will be rendered highly useful and attractive.

ALGERNON S. ROBERTS, *Chairman.*
AARON CLEMENT, *Rec. Sec'y.*

Philadelphia, October 7th, 1846.

The Potatoe Disease.

The following very curious article we take from the *Berwick Advertiser* of 8th of Eighth month last, which was kindly handed us by a friend, who is personally acquainted with W. Whitehouse, the writer, and says his statements may certainly be relied on. It behoves every one to throw all the light he can upon the disease, and its remedies, that is so widely and seriously affecting the Irish potatoes. Wherever it can be done, we would advise the farmer to lime his potatoe ground. For many years, while on a farm, the editor never failed to have a good crop of potatoes on ground which he had limed: he uniformly believed that lime was especially favourable to that root. This, however, was before the appearance of the *potatoe disease*. Instead of tracing the cause of this malady to a particularly wet season, or particularly dry season, or hot season, we apprehend—like epidemics among ourselves and our cattle—it must be attributed to circumstances which have hitherto entirely eluded our perceptions. There may, however, be an antidote. Let us seek it industriously, by experiment and observation. Lime your potatoe ground.—Ed.

To the Editor of the *Berwick Advertiser*:

SIR,—Allow me to lay before you a statement respecting an experiment which I made last year, and am following up this summer, as a probable means of renovating and improving the qualities of our second necessary of life, potatoes—which have been degenerating for several years back.

Aware that many garden shrubs and herbaceous plants have their qualities maintained and improved, by propagating them by *cuttings* of the stems, rather than by dividing the roots or by seed; in the latter end of June, 1845, I planted, in a good light soil, *without manure*, cuttings of the green stalks of early potatoes. I scarcely cherished a hope that they would produce tubers; yet in autumn I found a crop—some of them the size of boys' playing marbles, and most of them from two to four times that size.

These were planted the 23rd of last February; and now, removing the soil from part of a root, the first and only one that I inspected is full larger, and of finer appearance, than those growing in the same ground and planted with tubers of the same sort.

The cuttings were the tops of the stalks, four or five joints from the top, and cut *close*

under the joint with a very sharp penknife, and with a quick, clean, sloping cut. All the long leaves were clipped off, and such of the buds of the stalks as were growing into leaves, shortened a little, except the top buds—taking particular care not to do this so close as to pinch the bud off, or bruise the stalk—as it is out of these buds that the young tubers grow.

They were planted in a sunny aspect, and shaded, and watered every evening in dry weather, for two or three weeks, until they began to grow.

This summer I am planting about half, or two-thirds of the whole stalks; laying them nearly horizontally, under two or three inches of soil, with the top buds only above ground. The seed will no doubt be more abundant in this length of stalk and horizontal position. I am planting them in portions of ground the size of onion beds, laying a row of plants three inches asunder the whole breadth of the bed, and another row directly opposite, with the top buds of both rows meeting each other. In this way they will need little shade, and will be easily weeded and watered. As it is rather difficult to furnish shade, I plant some behind any large culinary herbs; and even behind, and between, ridges of growing potatoes. The broad leaves of the former, and the luxuriant stalks of the latter, are a sufficient shade. But these growing potatoes, or herbs, are such as will be dug up in the course of three weeks, as this new crop must have sun to mature it. Latterly I find that by bringing the top buds very near together, they need *no shade* except a few stalks and leaves thrown over them, of those weeds, herbs, or cuttings of leafy shrubs, on which earwigs and reptiles do not lodge, so that there is no expense, and little trouble attending this attempt to improve potatoe seed.

The cuttings should be taken from healthy plants and planted without manure in ground that has not been recently set with potatoes.

I now find young sets growing upon stalks of early potatoes which I planted only three weeks ago. It is, therefore, not *too late* to plant cuttings of second earlies and the later sorts. I also find that the small stalks produce as well as the thick stalks; so that those who would hesitate to cut the main stalks of their growing crops for this purpose, might succeed by using the small ones. It may be advisable to cover the crop with an addition of light soil, and leave it in the ground until setting time next spring.

This method of endeavouring to improve the potatoe will be more expeditious than that of doing it by the seed of the potatoe—

apple—although that should be persevered in, to obtain varieties—and the produce could be always depended upon to be the same sorts as those from which the cuttings were taken.

If landed proprietors and Horticultural Societies would encourage this mode, and if farmers, nurserymen, market-gardeners, and every cottager who has a few yards of spare fresh ground, would immediately practice it, I believe that in two or three years—through the blessing of Heaven, ever ready to second man's instrumentality,—the whole of the united kingdom would have more abundant crops of this nutritious root, much improved in quality, and the different sorts distinctly classified. It is also highly probable that if cuttings of these new plantations were, from year to year planted in fresh ground, the plague of this mysterious disease might be entirely eradicated. I am planting cuttings of the stalks of those growing from the result of my last year's experiment, and expect that the offspring will be superfluous.

W. WHITEHOUSE.

Spittal, Berwick-on-Tweed,
July 29th, 1846.

Strawberries.

Cincinnati appears truly to be in the region of this fruit. Her people luxuriate in them, and her gardeners understand their propagation. The Gazette of that city of the 27th of Fifth month last, gives the following description of an abundance, which makes us wish we "had been there to eat." The supply in our own market, however, was a liberal one, and prices reasonable. The general flavour, owing probably to the continued wet weather, was not so fine as usual.—Ed.

"Our market is well supplied with this delicious fruit. Probably one hundred bushels were on Fifth street yesterday. One man had thirty bushels, and several others ten and twelve each. The price ranges from five to twenty cents per quart; Hovey's Seedling selling quick, at the latter price, and one must rise betimes to get these at any price. It is a fact well illustrating the importance of raising good fruit only, while you are about it, that Hovey's Seedling strawberry is in greater demand here at twenty cents, than common kinds at five. One gentleman from Chillicothe paid \$6 20 yesterday for a bushel of the seedling, and took them home, via the river, to show his friends what can be done in the strawberry line. There was hardly an imperfect berry in the lot; the size varying from four to five inches in circumference."

It is said a plantation of the Alpine strawberry yields fruit the same season it is made.

For the Farmers' Cabinet.

Destructive Insects.

MR. EDITOR,—Though almost out of season, my promise made in your July No. must yet be fulfilled. Early in last month, a perfect insect one and a half inches long, with filiform antennæ half an inch long, colour the same as its head—beautiful brown—six ringed abdomen; short thorax, densely covered above and below with scales; black eyes; and four rudimentary wings—external pair brown, internal, ash coloured, made its appearance. From its inability to fly, it is probably the female of the canker worm of New England, adverted to and a plate given—much smaller than the natural size—by J. J. Thomas, in his late excellent "Fruit Culturist." For a more extended notice of its habits and modes of destruction, your readers may refer to the article, Span-Worm, in the American Farmers' Encyclopedia.

July 26th, I took a number of larvæ of the above soon after their first existence, and in six days they were all dead and changed in appearance. Their death was caused by the larvæ of another insect in their interior. In two weeks—August 9th—it emerged a most beautiful ichneumon fly: its length half inch; antennæ filiform black, and as long as its body; four anterior legs yellow and white, two posterior yellow, white, and black; rings of abdomen white and black alternately; wings membranous; colour changeable. They have a sting. It is gratifying to know that we have this beautiful little assistant to keep in check the ravages of those devastating loopers. If, however, these last hymenopteræ produce but one brood in a season, which is probable, then we must still be on the alert, as the loopers, or span-worms, appear at different periods in the season.

I have not yet succeeded in procuring the perfect insect of the second variety of caterpillar described. I am, however, convinced the two kinds are essentially different—the one spins a cocoon, the other descends into the earth. I have them now in their pupa state, spun in cocoon, and may succeed next season. Both kinds are rapidly increasing in this section. Let us then not be idle. You, Mr. Editor, may write and print, but how shall we get the great mass to read and act? Would that every owner of an apple tree would even effect as much as the little fly which I have attempted imperfectly to describe; then should we soon be divested of these destructive insects.

J. K. E.

Paradise, Pa., September 15th, 1846.

General Principles and Directions for Irrigation.

SOME points respecting irrigation may be considered as well established, to which it is proper that I should refer. It is settled that simple water, without any admixture, is in itself a great enricher of the soil, or perhaps, more properly, a great promoter of vegetation. If the water of irrigation is charged with enriching matters in a state of solution, its beneficial effects are of course increased. Waters charged with mineral substances, such as water strongly impregnated with iron from peat bogs, or water from copper mines, is pernicious to vegetation, as any one may see, who will visit the outlets of the copper mines of Cornwall. It is established, likewise, that water in irrigation, in order to produce its best effects, must not be suffered to stagnate upon the land, but must pass in a steady progress over it; and that this progress should be comparatively gentle, and not sudden and rapid. It is equally well established, that lands which it is proposed to irrigate, should be thoroughly drained, so that the water poured upon the land should not be suffered to stand in the land, nor upon it. The effect of stagnant water upon the surface, or the complete saturation of the soil, is to change the nature of the herbage, and to produce those grasses, which are coarse or innutritious, in place of the finer, sweeter, and more healthful. Yet it is not the mere transition of the water over the surface that is to be sought. It is desirable to have it soak into the ground, but not to remain there. Its speedy transition over the surface is to be effected by the inclination of the land from where it is received to the trench, furrow, or ditch, by which it is to be carried off. Its passing into the ground, and finding a speedy passage off, is to be effected by a system of thorough draining and subsoiling; for if the subsoil is impervious, the irrigated field becomes converted into a marsh. One of the most eminent farmers in Scotland, whose hospitality I had the pleasure of enjoying, but whose death since that time is deeply to be lamented,—Mr. Oliver, of Lochend, near Edinburgh,—who had a large extent of meadow, irrigated by the sewerage water from the city, found that, after his fields were thorough drained, the benefit of the irrigation was greatly increased; for by the descent of the sewerage water into the soil, as well as over it, the enriching portions of the manure in a state of solution were carried to the roots of the plants. In the irrigated meadows of the Duke of Portland,—for its extent one of the

most beautiful and finished agricultural improvements which can be found—he showed me, that portions of his irrigated lands, which had even been drained, continued to affect his sheep with the rot; and this evil was not remedied until the draining was carried to the depth of eight feet or more. Before that, without doubt, the stagnant water at the bottom prevented the water of irrigation from passing off, and may be said to have poisoned the whole ground.

In irrigation skillfully managed, the increase of product is often very great—two-fold, fourfold, in many cases even fivefold. Even sands which were barren, have, by irrigation, been made productive. Plants, in such cases, having once found a footing, by the spread and decay of their own roots, have at length formed a soil, and created around themselves the elements of fertility. The effect of pure water, I have already said, is considerable; but when this water brings with it the refuse of the streets and habitations of a town in a state of solution, the effects, as we shall presently see, are most remarkable. I have seen it stated, that water issuing from a limestone soil, and strongly impregnated with lime in the form of a sulphate or other combination, has been employed with great success in irrigation. Such instances have not come under my observation; but I cannot doubt the effect, where the soil was of a nature to require that element. In respect to manures, or any of the constituents of plants, it is evident they can be taken up only in a state of the finest solution. Here homeopathy triumphs, and no human sense is acute enough to discern, no human scales are fine enough to measure, those infinitesimal atoms out of which the rough substance of the gnarled oak is formed.

It would be idle, in a work of this nature, to attempt to lay down any thing more than the general principles of irrigation. In the accomplishment of any particular work, all the localities are to be considered, and the effecting of it upon any large scale would require considerable engineering skill.

Irrigation of land and inundation are not the same. The inundation of land resembles what I have already described under the process of warping, where, the land being enclosed by embankments, the water is admitted to flood the land, and is held fast until its floating riches are deposited. This can seldom be done without disadvantage upon a growing crop, unless when in its earliest stages of growth. Irrigation is the gradual filtering and spreading of the water over the soil, and, where not too rapidly applied, may be done with safety at any period

of the crop. This, however, can only apply to pure water. The application of turbid water, where a considerable amount of mud and earthy matters is held in suspension, or the application of sewerage water to a growing crop, would be liable to the same objections as inundation. I am referring, as must be obvious, to fields in grass, to which irrigation is applied; and not to fields under arable culture, to which it may be, but to which I have never seen it applied. What are called *catch-meadows*, is a form of irrigation upon side hills, where the water, after passing over a certain portion of the land, is caught in a trench, and again used for the irrigation of other portions of land. In a plan of irrigation, the first thing to be considered is the command of an adequate supply of water, and this, of course, at a level above the land to be irrigated. This may be obtained from a brook, whose course may be turned, or a portion of whose waters may be diverted for that purpose; or, as it is here sometimes obtained, by the collection of the water of springs bursting out upon the high lands into a common receptacle or reservoir, which may be tapped for the purpose of letting out the water, as it may be required. I recollect at Canterbury, in New Hampshire, at the establishment of the United Brethren—certainly among the best farmers in the world—that these industrious people, for the sake of establishing a mill power, much needed among them, had, by an embankment or dam between two high clay hills, formed a large basin or reservoir, which the melting of the snows in the spring, the rains, and some springs on the sides of these hills, would completely fill with water, furnishing a supply for the season; and which, passing into successive basins as it descended the hill, was used five times for mill purposes; such as a flouring mill, a threshing mill, a mill for sawing wood, a mill for grinding bark, and a mill for the dressing of leather. I could not help admiring the ingenuity of these people in creating a mill power where none existed before; and it is perfectly plain that, by such an arrangement, they might have executed an extensive system of irrigation, had it been thought proper so to apply the water. In some situations, where fuel and labour are not expensive, steam power might be employed with advantage to force water and to form a reservoir at the height necessary for irrigating the land below. On a farm in Dedham, Massachusetts, situated upon an acclivity, at the foot of which ran a small brook, I saw that the farmer had formed a reservoir above his house and barn. Into this reservoir, through leaden pipes of a

small bore, the water of the brook was forced up, by means of an hydraulic ram and forcing pump, itself operated by the running brook; and a supply of water was always maintained in the reservoir amply sufficient for the domestic purposes of the family, and the supply of the cattle in the yard. The water was forced a considerable distance, and the expense of the machinery was very trifling. The cost and labour of keeping it in operation were nothing, excepting that of opening and shutting the gate. The expenses of the whole apparatus, excepting the reservoir, did not exceed five pounds, or twenty-five dollars. The farm would, in England, be considered a very small one, not exceeding one hundred acres; but it shows, just as much as a larger one, to what advantage the most simple contrivances may be applied. This water, thus raised, might have been used for the purposes of irrigation.

Where the supply of water is sufficient, it is carried along on the upper margin of the land to be drained in a trench or furrow; and when it is required to throw the water over the land, the end of this trench or furrow is to be stopped, either by a gate or a damming up for the occasion, so that the water entering it may flow gently and evenly over its sides. It is plain that the water trench or furrow should be carried nearly upon a level; first, that the flowing of the water over the sides of the furrow or gutter may be equal and uniform; and next, because any variation from a level would force the water to a particular point, either to prevent its equal diffusion over the field, or to occasion, perhaps, a rupture of the side of the trench, and an injury to the field itself. The variation from a level, recommended by some persons with a view to giving the water an easy flow in the trench or gutter, is only one inch fall in every ten feet.

Besides the formation of the trench or furrow, the surface to be irrigated requires to be made even, the knolls reduced, the hollow places filled, and the holes, occasioned by vermin of any kind, stopped, that the water may flow evenly over the whole. The degree of inclination desirable in a field to be irrigated, is stated to be about ten feet in ninety; but although this may be found desirable, it is obvious that it cannot be under the control of the farmer to any considerable extent, but at a very great expense. We must take the land as we find it; for few things are more costly than attempts materially, or to any great extent, to alter its shape. It would be prejudicial to undertake to irrigate our lands without

the means of getting rid of the water, and without having a gradual, though not a rapid, transmission of the water over the surface; but in cases where the inclination is too great, the supply must be more gradually rendered.

The frequency with which water may be applied to meadows, and the length of time which it may be suffered to remain on them, are points to be considered. At Welbeck, at the Duke of Portland's, after the prepared land was sown with grass seeds, the water was brought upon them as soon as it was thought they would bear it; i. e., after they had become sufficiently rooted, and the ground consolidated around them. This would vary, according to the season, from one month to six. The great danger to be apprehended upon newly-sown lands is the washing away the dirt from their roots. The duke himself remarks that, "short of that, they cannot be watered too soon, or too long at a time, unless the land has very recently been drained, in which case it would not be well to increase the natural strength of the springs until the land had forgotten its wet propensities. On really dry land there are only two limits to the length of irrigation, viz., the want of water, and the want of consistency in the soil, so that it shall not be washed away from the roots of the grass."

After the grass had become sufficiently strong, the water was kept going over it for about four days, and then taken off. The grass was mown as soon as it was ready for the scythe, and the water again turned over. The same course was pursued upon the old grass land. About once a month, the water is turned on for three or four days at a time, according to the supply, and this throughout the year. When the water is abundant, it is applied oftener than once a month; but how long it should be kept on, is somewhat matter of judgment in reference to the weather and the state of the ground. The manager of the works chooses to keep it on until he sees its effects upon the grass.

Lord Hatherton, on his meadows at Teddesley Park, informs me, that they commence irrigation about the 1st of November, and the water remains three or four days on the land. If the supply is sufficient, it should be renewed once a fortnight. In a dry season, it is advisable to apply it immediately after cutting the grass; but it must not then be allowed to remain many hours in the same place, especially if the sun is powerful.

Mr. Oliver, at Lochend, where the sewerage water of the city was used, deemed it unsafe to apply the irrigation immediately

after the cutting of the grass, but considered it altogether advisable to wait until the grass had acquired some growth. The sewerage water, in this case, was of great strength, and a different rule was applicable from a case where the water of irrigation was pure.

Mr. Roals, who farms some cold land one thousand feet above the level of the sea, in Somersetshire, and who has improved a considerable tract by irrigation, says, that "the water should never be suffered to remain in one place over the grass more than two or three days at a time without being changed; nor be turned upon the land in order to remain there during frost; but should the frost set in while the water is on, by no means alter it until the frost is gone; for if the surface is exposed, and the frost continues, it will most likely lift the land and kill the grass."

These observations will have peculiar value in New England, where the frosts are severe, and where grass lands, upon which water stands in the winter, or lands upon which grain has been sown in the autumn, if particularly wet, are sure to suffer most severely from freezing.

I have already spoken of the quality of the water used for irrigation. At Lord Hatherton's, it is the water gathered from the different drains, in different parts of the farm, whose position was such that their supplies could be turned to this purpose. At the Duke of Portland's, a small river, called the Maun, running through the neighbouring town of Mansfield, supplies the water of irrigation. After strong rains, when the washings of the streets and sewers of this town are poured into the river, its waters become quite turbid, and have a superior efficacy. The sediment deposited by a single watering, in such cases, is very observable. I shall presently speak more at large of the application of sewerage water.

"In the management of the crops of grass upon irrigated meadows," says one whose practical knowledge of the subject allows him to speak with authority, "experience has shown that to let the grass grow to be too old, viz., until the seed of it is in a forward state, is productive of very great injury to the land. When the grass has been cut for hay in this state, and brown at bottom, the land does not recover for a great length of time. It is also found very desirable, after beginning any meadow, or portion of a meadow, which receives the water from one carrier, and at one time, that the consumption of it in a green state should be carried on as quickly as possible, so that in dry weather the water may not be kept off of it too long; for in that case it requires so

much water before the land is saturated, and will allow the water to flow evenly over it, that much loss of time occurs in the next crop of grass."

I have thus touched upon the principal points connected with this great agricultural improvement, though there are some others to which I shall recur before I quit the subject; and I now proceed to speak of some principal experiments, which have come particularly under my observation.—*Colman's Tour.*

Newcastle County Agricultural Society.

THIS Society held its Annual Exhibition on Wednesday, the 16th ult., on the farm of Major John Andrews. At an early hour in the morning, the farmers from all parts of the county, accompanied, many of them, with their families, flocked to the city, and by nine o'clock the streets presented an animated and exciting appearance. At the time specified, the procession formed at Mr. John Hall's Hotel, and proceeded to the ground. The procession reached from the Bridge to Fourth street, consisting of about one hundred and fifty horsemen, and fifty carriages. On arriving at the ground, the President, Mr. James Canby, organized the meeting.

Dr. Kennady addressed the audience in an eloquent manner; we presume the oration will be published, and we will not anticipate its appearance by any remarks of a general character. Previous to leaving the stand, the president read the report of the committee on gardens, and awarded the premium to William Rittenhouse, gardener to Samuel Richardson, of Christiana Hundred. Nathaniel Setters was favourably noticed. Mr. Foote addressed these gentlemen, complimenting them on their industry and admirable success. The company then adjourned to the cold collation, in a farm-house near by, which was attended to by Col. Glazier, Mr. Boies, and several other gentlemen, who volunteered their attentions.

The ground on which the cattle were exhibited, was immediately in the rear of Major Andrews residence, commanding a distant, but beautiful view of Wilmington and the surrounding country. The number of cattle was not as large as was expected; we obtained as complete a list as possible—many of the pens were not marked, and the names of the owners could not be obtained. The display of agricultural implements was also small, and many were disappointed to find Hussey's Reaping Machine was not on the ground.

The committee on crops reported but little

competition for the premium. Their report stated that the wheat crop has fallen short in the State this year, about twenty per cent., and corn in the same proportion. The potatoe crop was also noticed, which is very poor, owing to the rot. Bryan Jackson received a premium for raising three tons of hay on an acre of ground.

The number of people at the exhibition throughout the day, was very large—at one time it was supposed nearly five thousand people were present. The road to this city was lined with vehicles of every description, and presented a very lively appearance.

THE HORTICULTURAL AND MECHANICAL EXHIBITION IN THE CITY HALL, was crowded with visitors presenting a scene of beauty seldom excelled. The arrangements were perfect, and the committees did everything to render a visit pleasant and agreeable.—*Delaware Journal.*

Report of the Committee on Ploughing at the Newcastle County Agricultural Society.

AT two o'clock, the exhibition grounds were deserted for the ploughing field, where the ploughmen had already resorted, and were busily engaged in different parts of the field, followed by crowds of their friends, in trying their ploughs, regulating their set, and in practising their teams.

At half-past two, they were called up to make their entries and draw for lands, ready for a start. The immense crowd of spectators in carriages, on horseback and on foot, took position on the four sides of the grounds laid out for ploughing, embracing six or eight acres, and forming an amphitheatre or hollow square.

There were fifteen entries, as follows:—
E. A. Collins, Wiley Plough, land No. 1.
Richard Carter, Prouty Plough, No. 5½, land No. 2.
John Hollingsworth, Moore Plough, No. 8, land No. 3.
Francis Sawdon, Moore's Plough, No. 8, land No. 4.
George Loftman, Moore's Plough, No. 8, land No. 5.
David T. Morgan, Moore's Plough, land No. 6.
John Newlove, Prouty Plough, No. 5, land No. 7.
William Neville, Beach's Concave Plough, No. 11, land No. 8.
George Piper, Beach's Plough, No. 11, land No. 9.
James N. Cleland, Moore's plough, No. 8, land No. 10.
William Banks, Prouty Plough, No. 5½, land No. 11.
John Everson, Moore Plough, No. 8, land No. 12.
Thomas Truitt, Prouty Plough, land No. 13.
Robert Fountain, Moore Plough, No. 7, land No. 14.
Charles Carter, Moore Plough, No. 7, land No. 15.

Each ploughman first struck out his own land as it had been previously staked, by going one round; and here it was that the great skill of our ploughmen in running straight lines, exhibited itself—never did Paul Hoover line a bee to a hive straighter than they went to the opposite stakes; and without flattery, and with truth, it may be said, that the compass itself would in reference to many of the furrows drawn, have indicated no deviation from an entire straight line.

The fifteen teams now came up abreast, and every ploughman had his position, ready for the word "go." The committee may here state, that the ground selected for the match, was such as was calculated to tax to the greatest possible extent, the skill and perseverance of the ploughmen. So far from being a smooth green sod, which is generally selected, the ground was covered with a heavy matted crop of clover, blue grass, and fox tail, and in addition to all this a straggling crop of tall weeds.

It was a clay soil, and for the most part very tenacious, and rendered particularly hard and compact by the drought of the season. The first round seemed to have satisfied the ploughmen of what they had to do: few seemed sanguine, and none apparently confident of the result, though among the entries were no less than four first premium men, the successful candidates on other fields. Indeed there was an anxiety felt by some of the ploughmen, and a doubt expressed, as to whether they would be able to overcome the obstacles that opposed them, so far as to make the performance even creditable in the eyes of the thousands that beheld them, and who could only judge superficially of the difficulties with which they had to contend. The committee, for these reasons, permitted the use of chains to the ploughs, and also allowed to each a cleaner. At the word given they got under way. The teams were so well trained that the heavy draft offered no opposition to a fair pace. There was no halting or pausing, but furrow after furrow was rolled up, each as true and perfect as the last, or if marred in the slightest, from any cause, the comments of the spectators soon announced the fact in tones even audible to the ears of the ploughman himself. But the remarks were all generally in a friendly and encouraging spirit, and indeed it was not a little interesting to hear the comments that greeted the ploughman as he each time came out, as "That is well done," "You are doing well—stick to it," "Keep cool," &c.

The ploughman himself with every nerve braced, a strong arm, a quick and ready eye,

apparently unconscious of every thing around him, directed his plough with his utmost skill—at most a furtive glance, as he turned at the end, down the ribboned furrow he had just cut, was the only instant he was attracted from his task, and as if gathering from the view, hope to encourage him to greater efforts. Again he would push down his land apparently watching his plough and coaxing his team with a "Wha, padder, Wha," for an effort that should surpass the last.

But now all is accomplished but the last furrow, the cleaning out furrow, the great test of the ploughman's skill—all, however well done, may be marred in an instant by the slightest balk here. The spectators crowd up—the voices of friends are heard encouraging to coolness and to take time but the good ploughman has already half anticipated his task; but a single narrow stripe, not varying one half inch in width the whole distance, is all that remains—his Plough is pitched, and the completely inverted sod is upturned, leaving the land with the appearance of having been handsomely *divided* not ditched or gullied, but neatly separated by the furrow and giving to the whole a beautiful and perfect finish.

Such certainly was the performance, and such the result on most of the lands ploughed at this match.

It was this description of ploughing, that the committee were called on to judge and to decide upon—to decide as to the relative merits of each performance. The task was by no means easy. That they might secure for their award on the part of all, the concession of perfect impartiality, the committee designated three of their number to act as a sub-committee and to retire from the ground, and not to come upon it, until after the ploughing was completed. They were Washington E. Moore, Francis Sawdon and John Smith. Without knowing who ploughed the particular lands, but called on to examine the fifteen that had been ploughed, and to designate the four best among them, these members of the committee, after the most careful examination, and taking the merits and defects of each into account so far as their judgment and experience would enable them to do so, came to the conclusion that was announced on the ground, namely, that John Newlove was entitled to the first premium, William Banks to the second, John Everson to the third, and Thomas Truitt to the fourth.

There were several other lands that were remarkably well ploughed. The committee would not designate except in one instance, and they do this to point out on the part of

the individual a merit deserving special notice, namely, that of receiving and abiding, without murmur or complaint, the decision of the committee appointed to judge and decide between the competitors. None doubted that Robert Fountain's land was ploughed well; he had made a most spirited, and as some probably thought, a successful effort for one of the premiums. But the committee decided otherwise, and with this decision Robert Fountain was the first to express his entire satisfaction, and to congratulate his successful rivals. The grace of acknowledging a defeat may equal the glory of winning a victory. The committee would point out this example as worthy of imitation on all future occasions. Let the opinions of the committee be respected as the just and impartial judgment of those called to decide.

The committee deem it but justice to one other of the competitors for the premiums, to name the peculiarly embarrassing circumstances under which he carried on the contest. The ground ploughed extended across from one slight hill to another. The land in the centre of the valley, being land No. 10, was drawn by James N. Cleland. The great growth upon it of grass and tall weeds was obvious to the eye, but this held out no terror to so good a ploughman as Mr. Cleland. It was not till he entered upon it and discovered from the wash, &c., not only a variety of soil, but from the water that must at times have lain upon it, that it turned up in many places in very large clods or flakes of earth, that Mr. Cleland fully contemplated all the difficulties he had to contend with. Mr. Cleland, as having been the successful candidate last season, and having borne off the Society's first premium, was looked to as one whose reputation was established, and from whom the most finished work might be expected. But he soon saw that both his skill and strength would be taxed to the utmost to perform any thing even respectable, and not to allow the general appearance of the field to be marred by a rough and unsightly land. His efforts to this end—for the credit of the field—aided by his fine and well trained and powerful team, were so far successful as to make his work quite respectable, and that is the most that can be said of it, and which is indeed high praise, considering what he had to contend with.

The committee congratulate all the ploughmen on the result of the match: they congratulate them and thank them for the interest they contributed to the day, and they conclude in the language of the beautiful Ode written for the occasion,

"God bless Columbia's yeomanry,
And give them happy homes."

A second match came off between the boys. There were five entries, namely: George Jackson, George Grebby, Thomas Jackson, John C. Clark, Jr., and Henry Bird. The premiums were taken by the four first named, in the order they are given—three of them using the Prouty plough and one the Wiley. The ground was so very hard that it taxed the strength of our young friends severely, still they stuck to their work and persevered to the end. It was surprising almost that they could plough there at all, but they did plough, and some of them made highly respectable ploughing, and nothing could exceed the emulation they evinced to excel.

The influence of all this upon their future character cannot but be highly beneficial.

JOHN C. CLARK, *Chairman*.

BRYAN JACKSON,
JOHN W. ANDREWS,
WASHINGTON E. MOORE,
FRANCIS SAWDON,
JOHN SMITH,

Committee.

Sept. 17th, 1846.

To have Good Vinegar.

THE cowherds on the Alps and in several parts of France use milk whey to make the sharpest vinegar, and they also extract from it a salt called in pharmacy sugar of milk, which the Swiss doctors consider as the best detergent to purify the blood and cure radically the most inveterate cutaneous complaints. The method they use to prepare this salt is this: after having separated all the caseous and oily parts, the whey is clarified and boiled until reduced to one-fourth part of the whole, which they deposit in wooden or earthen pans in a cool place. In a short time the saccharine particles are crystallized, the phlegmatic part is then decanted slowly and the sugar is dried upon pieces of grey paper. This operation may be accelerated by boiling out the whey entirely, but the sugar which remains at the bottom of the kettle is coloured and unfit for pharmaceutical purposes: it might, however, answer well for veterinary uses.

The process for making vinegar out of milk is very simple. After having clarified the whey, it is poured into casks with some aromatic plants or elder blossoms, as it suits the fancy, and exposed in open air to the sun, where it soon acquires an uncommon degree of acidity.

The Russians and Tartars make with the whey of their mares' milk a strong and in-

toxicating liquor, which they call Koumis, and also vinegar, by suffering that substance to pass from the vinous to the acetous fermentation.—*Transactions of the Society of Arts, N. Y.*

Good vinegar is one of the necessary luxuries of the table, and with a little care it is always attainable by those who have apple orchards and cider of their own, and ought to be more generally supplied in our market than it is. When once a cask of good vinegar is procured, there need be no difficulty in keeping it filled with that of the same quality. The farmer should put away his good strong cider in substantial casks under cover, with the bung hole open to admit the air, and let it gradually undergo the necessary fermentation. If the casks are frequently shaken, and their contents occasionally drawn from one to another, the process is hastened. Mix nothing with it; let it be the pure cider. Draw from the hogshead to a barrel, and from the barrel to a five gallon keg, and from that again for the table. It is thus kept stirred, and comes in contact with the oxygen of the atmosphere, which will the more speedily *sharpen* it. Keep filling the hogshead with strong, sound cider, as you draw from it to fill the barrel, and the housewife need never spoil her pickles, nor mine host his cabbage, for lack of good vinegar.—Ed.

Elihu Burritt in England.

This individual, so well known as the *learned blacksmith*, is now we hope, enjoying all the gratification anticipated in the following annunciation made some time previously to his embarkation. Who shall estimate the influence of such a man, in throwing abroad his *Olives leaves* along the hedge rows, among the hay-ricks and turnip fields of Old England! Millions of the middle classes whose arms are brawny as his own, may have afresh opened to them—and that without the aid of his Hebrew, his Sanscrit, or his Norwegian,—in the powerful language of his powerful mind, a glimmering of the blessings in store for them in the proper pursuit of their own high calling.—Ed.

“About the first of June, we propose, under certain conditions, to take the steamer or packet for England. On our arrival, we propose to take a private hickory staff and travel on, like Bunyan’s pilgrim, through the country, at the rate of about ten miles a day,

“With a pocket for my wheat, and a pocket for my rye,
And a jug of water by my side to drink when I am dry.”

Passing thus leisurely on foot through the agricultural districts, we anticipate the opportunity of looking through the hedges and into barn-yards; sometimes into the kitchens of the common people, once in a while into a blacksmith’s shop to smite at the anvil. In fact, we intend to pull at every latch-

string that we find outside the door or gate, and study the physiology of turnips, hay-ricks, cabbages, hops, &c., and of all kinds of cattle, sheep, and swine. We propose to avoid the *lions* of the country, and confine our *walks* to the low lands of common life; and to have our conversation and communion chiefly with the labouring classes. Perhaps we might get together a knot of them some moonshiny night and talk to them a little on temperance, peace, and universal brotherhood. During such a pedestrian tour, we think we might see and hear some things which a person could not do while whizzing through the country on the railroad at the rate of thirty miles an hour.”

THE FARMERS’ CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, TENTH MONTH, 1846.

Our Philadelphia Agricultural Society, agreeably to public notice, held its annual Exhibition of stock, &c. at the *Rising Sun* tavern, on the Germantown road, on the 30th ult., and the ploughing match on the following day. Those who could see and feel their way through the dust, as many hundreds did, were richly rewarded for their perseverance, by the fine display of choice animals on the ground. These were perhaps not quite so numerous as on some former occasions, but their appearance indicated great care and judgment, as well as success in the production of beautiful animals. The Durhams, the Devons, the Alderneys, the Ayrshires, and the Natives, were there to testify for themselves; and the breeders of this vicinity, who produced them, are not the men to allow them to make a weak report. Some of the horses would do credit to any part of the Union, and the sheep and hogs on the ground, would compensate in appearance and quality, for what was lacking in number. They would add respectability to any Exhibition in the world. The productions of the garden, the field and the orchard, were really luxuriant, and sufficient to satisfy the wishes of the cultivator; our agricultural implement makers were on the ground and made an exceedingly interesting display of their wares. It was particularly gratifying to witness the excellent, and apparently perfect workmanship of many of the articles. They were not however made purposely for the show, but only in the ordinary manner. They could not fail to tempt the farmer to do his work well, and he who wishes first rate implements has only to apply to our friends of this city whose advertisements will be found in this paper.

The society dined together at three o’clock on the 30th; an excellent dinner was honestly discussed, and good feeling, enlivened by enthusiasm in their honorable calling, made it an occasion for the sparkling of wit, and much good speaking.

THE Long Island Horticultural Society had quite a spirited exhibition at Flushing, about the middle of last month, and awarded numerous premiums. Wm. R. Prince and Co. sent from their garden and nurseries, more than fifty varieties each, of apples and peaches, and upwards of sixty varieties of pears, besides flowers in abundance.

A VERY serious disease has within a few weeks, appeared among the horses in the vicinity of New York. It was for a time pretty much confined to King's Co., on Long Island, but subsequently extended to Flushing and Staten Island. From a letter dated at Bergen Point, N. J. the 19th ult., we learn that it had reached that neighborhood. A friend from Salem, in the lower part of Jersey, informed the Editor, some three weeks since, that a number of horses had been seized with this distemper in that county, and that it had proved alarmingly fatal. Its seat is doubtless in the head. In a case on Staten Island, relief was produced when a copious discharge was obtained from the head of very offensive matter. The brain, on dissection, has appeared like a mass of clotted blood, and it has been suggested, that immediately on discovering the attack, the first symptom of which is indicated by a peculiar drooping of the animal, the forehead should be shaved between the eyes, and a powerful blister applied. Let this be accompanied by steaming with vinegar and hot oats—moderately bleeding, and relieving the costiveness always attendant upon the disease, if it even be by resort to the mechanical process of raking. Our friend from Salem, called it the blind staggers, and believed it was occasioned by some deleterious substance procured in the pasture, and would strongly advise the stabling of horses, without letting them run in the field. It is not believed to be contagious, as instances have occurred where horses have died, while others standing by their side, have escaped. It was recently stated by a member of the Farmers' Club in New York, that he had known a similar epidemic in Spain, and that cures had been effected by wrapping the head in blankets steeped in hot water, and following it up by copious bleeding. A committee was appointed by the Club to investigate the matter, and ascertain the remedies, if any really effective, had been discovered.

A MARVELOUS display of fruits, flowers, vegetables, &c., was made at the rooms of the New Jersey Horticultural Society, in Princeton, at its annual meeting on the 23rd, 24th and 25th of last month. The fruit was splendid, and the attendance, such as manifested a lively interest in the concerns of the Society.

Occasion was taken four months ago to mention the excellent location for an Agricultural School, offered by a property which lately belonged to the estate of W. G. Rogers, dec'd, and which had been purchased by our enterprising friend James Gowen. It is adjoining his homestead at Germantown, and seems admirably adapted for such a purpose. James Gowen, we have understood, has it in contemplation to open such an establishment, should his health admit of it. We cannot but believe the South and Southwest might derive lasting benefits from a school of this character in this vicinity. We heartily wish the enterprise may be prosecuted, and with all success.

CATTLE are sometimes choked with an apple or potatoe. A friend lately informed the Editor, that a cow of his, was this summer greatly distressed by getting an apple in her gullet, and which, with all his efforts he was unable to remove either upwards or downwards. As a last resort, thinking she must die, he placed the part of the throat where the apple lay, over a solid block, and with a blow of a mallet, mashed it. She swallowed the broken fruit, and was instantly relieved. Considerable swelling and inflammation of the parts, naturally followed, but with proper care, he had no doubt, she would entirely recover.

Our friend C. W. Haywood, of Germantown, left at this office a few days ago, an ear of last year's corn, many of the grains of which, had been curiously perforated, and a good deal of the inside eaten, as we often see the pea eaten in the spring of the year, by a worm or moth. The corn was lying in bulk in the ear, in the garret, and some five or six weeks since, numberless moths were observed on the wing, and it was soon discovered that they had made their escape from the grains of corn. It is of course, much injured; and should the insect spread itself widely over the country, it is impossible to estimate the amount of injury which it is capable of inflicting.

The Editor very well remembers something of the kind that attacked the corn in the ear in the crib, some five and twenty, or thirty years ago, particularly in the lower part of West Jersey. Is the moth we now speak of similar in character and habits, to that which appeared a quarter of a century ago, and which then excited a good deal of alarm? If our memory is not in fault, it did not continue more than two or three seasons. Who can tell us all about it? C. W. Haywood said he had upon enquiry, not been able to hear of it among his neighbors.

WILLIAM R. PRINCE, proprietor of the Linnman Botanic Garden and Nurseries at Flushing, and author of the Treatises on Horticulture, on Fruits and on the Vine, has lately published a *MANUAL OF ROSES*, comprising the most complete History of the Rose, including every class, and all the most admirable varieties that have appeared in Europe and America, together with ample information on their culture and propagation.

We have received a copy of the work,—a neat duodecimo—and have no doubt the lover of the Rose will find in it, as expressed in the title page, every thing almost, which it may be desirable to learn, regarding its cultivation and management.

"During the last ten years" says the preface, "the acquisitions made to the family of Roses, have been so remarkable for their splendor, fragrance and other qualities, that the public attention has been awakened to their culture in a degree, almost unprecedented in the annals of Flori culture," and those who most participate in this awakened interest, will most need and enjoy such a manual as is now offered to them. Our fellow-townsmen, Robert Buist, so well known among us for his enterprise and good taste as a florist, it will be recollected, also published a couple of years ago, an excellent *Rose Manual*, which is widely circulated among amateurs.

THE publishers—Harper and Brothers, New York, have forwarded a beautiful octavo volume, "THE TREES OF AMERICA, Native and Foreign, Pictorially and Botanically delineated, and scientifically and popularly described; being considered principally with reference to their Geography and History; soil and situation; propagation and culture; accidents and diseases; properties and uses; economy in the arts; introduction into commerce; and their application in useful and ornamental plantations; illustrated by numerous engravings. By D. J. BROWN, author of the *Sylva Americana*." They will accept our thanks, and allow us to congratulate the intelligent farmer, as well as the city and country gentleman, on this addition to our means of becoming more fully acquainted with the trees we have all our lives had around us, and with which we may have supposed we were already tolerably familiar. Who will ever tire in studying the forests of America!

A LOT of new corn, the first of the season, was in the Baltimore market on the 23rd ultimo. It sold for 74 cts.

In a letter dated at Liskeard, in Cornwall, the 15th of Eighth mo. last, a friend remarks, "we are using at present some excellent American flour; the cost is about 30s. or \$7 per barrel. The wheat crop here proves a very good one, and is nearly all secured. Barley and oats are thin, and the potatoes are even more defective than last year. The farmers are much discouraged about planting them again. Meat is from 6d. to 6½d. per lb., or 12 to 13 cents."

THE seventh number of Colman's Tour has been received and distributed among our subscribers. It will be found of equal interest with any of those which precede it.

WE are not able to perceive that the public good would be promoted by the publication of the letter from a "Friend to inventive genius"—W. S. of Baltimore. Had we thought otherwise, it should have appeared in this number.

THE Exhibition of our Horticultural Society last month was a very splendid affair. Many thousands visited the rooms, and so far as we have learned, all were gratified, and, as it seems to us, must have come away with feelings mellowed, and more than ever enamoured with the endless variety of nature's beauties. One could hardly stroll around the tables—or, to give the idea more correctly—could hardly force oneself through the crowd, without being increasingly sensible of the richness of the gifts bestowed by a beneficent Creator in fruit, flower and vegetable. We cannot particularise either the articles or the contributors. The pages of a whole number of the Cabinet would barely suffice to do so.

A BEAUTIFUL portrait of the late James Wadsworth, the great landed proprietor of Genesee, with an interesting sketch of his life, will be found among other valuable matter, in the last number of the *Farmers' Library*. This number also contains a splendid engraving of R. L. Colt's Mansion at Patterson, N. J.

FOR SALE, A BEAUTIFUL FARM,

Nearly adjoining the city of Annapolis, Maryland, containing 350 acres of land, naturally of good quality, and during the last four years, I have had it highly improved with clover, plaster, ashes, lime, and other manures to the amount of upwards of fifteen hundred dollars. The fences and buildings are all in good repair, and divided into ten departments, including one peach orchard, containing upwards of 1500 trees, in fine health of three summers' growth, and an apple orchard in full bearing. About 130 acres of this land are covered with the best sort of building timber.

I have a good wharf, where a large schooner can lie and receive or deliver produce. This farm is very pleasantly situated, high and dry, and about rolling enough to cast off extra rain water,—also has good spring water in several of the fields. The buildings consist of a good dwelling, nearly new, two brick servant houses, one house for the manager, two large tobacco houses, 30 by 70 feet each, one is used for a barn; stabling, corn, milk, and hen houses. From the above dwelling I can go to the Annapolis market in about fifteen minutes, where we have a tolerably good market for hay, peaches, sweet potatoes, milk and butter. Of milk about \$3000 worth may be sold annually. Freight is cheap to Baltimore, which is an excellent market, with which we have daily intercourse, both by steam and otherwise. But few farms have the same opportunities of doing business to profit, being now in good order to make money, and only on account of advanced age, infirmities, and residing at a distance, am I induced to part with it. It will be sold cheap. Persons desirous of seeing the place, will please call on me, near Baltimore, Md., and I will go and show it.

ROBERT SINCLAIR, Nurseryman.

August 26th.—41.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FRUIT AND ORNAMENTAL TREES, EVER- GREENS, SHRUBBERY, &c.,

In great variety, for sale as heretofore, by the subscriber, at his Nursery, near Haddington, four miles west of Philadelphia. Orders sent by mail, or left at the office of the Farmers' Cabinet—where catalogues may be obtained—will be attended to, and the trees well packed when ordered to distant places. City gardeners supplied with trees suitable for the streets, at a liberal discount. SAMUEL RHODES.

Tenth mo. 15th, 1846.

TREES FOR SALE.

The Subscriber has for sale at the Mount Laurel Nursery,—established by J. Needles—an extensive assortment of Apple, Pear, Peach, Plum, and Cherry Trees and Grape Vines. Also, a great variety of

ORNAMENTAL AND EVERGREEN TREES,

Which are of the best quality, and good size for transplanting. Orders left with Josiah Tatum, No. 50, N. Fourth street, will be punctually attended to, where catalogues may be procured.

EZRA STOKES.

Mount Laurel, near Moorestown, N. J.,
Eighth month 15th, 1846.

OF SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Ryegrass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoes Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1846.

tf.

FOR SALE,**AT D. O. PROUTY'S****AGRICULTURAL WAREHOUSE,**

No. 194 Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—tf.

THE quantity of rain which fell in the 9th month, 1846, was one quarter of an inch. 25 in.
Penn. Hospital, 10th mo. 1st.

Last month is said to have been more remarkable for heat and drought, than any corresponding month since 1804.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.

Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA**AGRICULTURAL WAREHOUSE,**

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW**Horticultural and Agricultural Ware-house,**

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Swedes Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BULST.

COAL.

THE subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Tenth month 15th, 1846.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. B. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion.	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

✍ We are prepared to bind books to order.

GUANO.

TWENTY-FIVE tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by

S. & J. J. ALLEN & CO.,

No. 7 South Wharves, 2nd Oil Store below

Market street, Philadelphia.

October 15th, 1845.

tf.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, for seven barrels or more, \$1 75 per barrel, containing four bushels each. Any number of barrels less than seven, \$2 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for wheat.

JOSIAH TATUM.

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THE FARMERS' CABINET,

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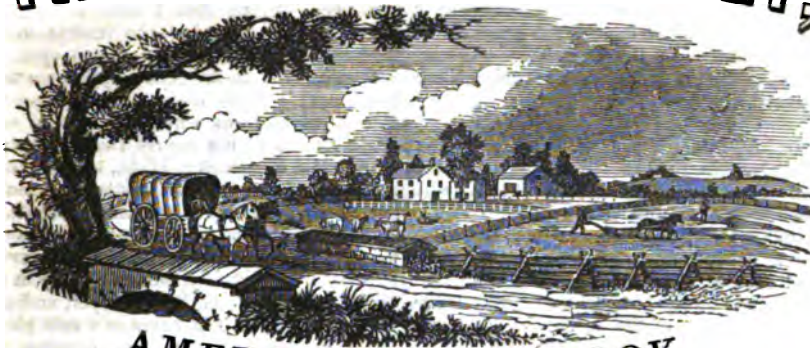
All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO
AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LUNN.

Vol. XI.—No. 4.]

11th mo. (November) 16th, 1846.

[Whole No. 142.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page

Insect in the Corn.

Our readers will recollect a reference in the last number of the Cabinet, page 101, to a worm or moth, found in the grains of corn, by C. W. Haywood, of Germantown. The presence of this insect, as indicated in the ear left at the office, was viewed by the editor with considerable alarm. On the 14th ult. he addressed a letter to Dr. Harris, so well known for his researches in natural history. The importance of the matter to which it refers, will excuse the publication of the following extracts from it, in connection with the reply so kindly and so promptly returned. The letter refers to the "fly weevil, that destroys wheat in Virginia and some of the Southern and Western States." Is this weevil confined to Southern parts of our Union, or is it identical with that which is but too commonly found in this vicinity? We have frequently known granaries of rye very much injured by a weevil in New Jersey. It was our practice, when its appearance was feared, to sprinkle a little very finely powdered air slaked lime through the bin, among the grain. We have also heard it said, that the presence of sheep in a barn where grain is kept, is particularly offensive to the grain weevil.

CAB.—VOL. XI.—No. 4.

The appeal made at the close of Dr. Harris's letter, will, we trust, be freely responded to. Great inconvenience results from the depredations of the worm in the locust tree. The value of this timber is perhaps not exceeded by that of any grown among us, yet it seems hardly worth while to attempt to cultivate the tree, as it is so soon, and so certainly, and so seriously injured by the worm. A remedy would be of great general benefit.—Ed.

THE following is an extract from the editor's letter to Dr. Harris: "I received a day or two ago, from a friend at Germantown, in this vicinity, an ear of corn of last year's growth, most of the grains of which were perforated in a very singular manner, by an insect which has drawn its nourishment from the softer part, and of course, greatly diminished its value. C. W. Haywood, who gave it to me, stated that his attention was first directed to the matter some five or six weeks ago, by observing that his garret, where some five and twenty or thirty bushels of corn lay in the ear, was swarming with a dun coloured moth, which he soon ascertained had escaped from the grains. I enclose a few grains, from some of which I think it will be found the moth has not yet made his escape. Yesterday, while holding a grain in my hand, one came leisurely out, and I put a pin through it, intending to forward it herewith, but this morning it is mouldered to pieces. It would be gratifying to me to receive any information relative to this insect. My friend said he had not

learned that the corn of any of his neighbours had been similarly attacked.

"It is impossible to estimate the amount of injury that might be done to the great staple of our country by the depredations of this insect, should it widely extend through our corn-cribs."

Cambridge, Mass., Oct. 16th, 1846.

RESPECTED FRIEND,—Your letter of the 14th instant, reminds me of the pleasure that I took in reading those numbers of the *Farmers' Cabinet* which you had the kindness to send to me from the 15th of March, 1844, to the 15th of May, 1845, inclusive.

You have some reason to be alarmed at the appearance of the insects in the corn-crib of your friend Haywood. Should they prevail to any extent in our country, they would prove a terrible scourge; now more than ever, since the potatoe is likely to fail entirely, and we have nothing to supply its place save corn. Bread is the staff of life: we must take care that it be not broken.

The little dun-coloured moth which you saw come forth from a kernel of corn in your hand, is "the fly-weevil, that destroys wheat" in Virginia and some of the Southern and Western States. Shall I give it a more fearful name, by acknowledging that it is the *Angoumois moth*, the same insect that appeared in the provinces of *La Vendée* and *Angoumois*, in the west of France, more than a hundred years ago; that it continued to increase there for many years, till its ravages in 1760, attracted the attention of the government, when it was found to swarm in all the wheat fields and granaries of these provinces; when by its ravages the people were not only deprived of their principal staple, wherewith they were wont to pay their annual rents, their taxes, and their tithes, but were threatened with starvation, from the want of good and wholesome bread. Let us hope to be saved from the like calamity.

The great and good Linnæus, was filled with alarm on finding the pea-weevil in a parcel of peas received from America, fearing that he might be the means of introducing into his beloved Sweden so great an evil. How much more have we reason to dread the spreading of this *Angoumois moth* in our own country.

You will find some account of this moth in my *Treatise on Insects Injurious to Vegetation*, published in 1842. At that time the habits of the insect were not known to me from personal observation; all my attempts to obtain samples of infected grain containing living specimens, having been

ineffectual, and my numerous letters and applications on the subject having remained unnoticed. Since then I have been more fortunate, and have had the insects in all their stages, living under my own eye. It does not seem to be generally known that this insect attacks maize, or corn, as we call it, as well as wheat. The fact was made known to me nearly two years ago. A friend in Worcester, Mass., told me that he found some corn that had been stored in his garret some time, contained insects in it; and he brought me two ears of this corn for examination. The corn, then appearing to be sound externally, was rolled up in several sheets of strong brown paper, and was tied securely and laid aside in a safe place. Some months afterwards, on opening the parcel, I found nearly a gill of dead moths in the paper, and three or four living ones. Every kernel appeared to have been perforated, and many had three or four holes in each of them. Some contained the insect in the worm state, and some had the chrysalis fully formed within them. The two ears were then put into a wide-mouthed glass bottle, which was corked tight, so as to prevent the future escape of the moths that might be developed from the worms and chrysalides remaining in the kernels. The moths have continued to come forth, and, as they were prevented from escaping, they paired and laid their eggs upon the corn in the bottle. Two broods have been produced in a single year; the first brood coming out of the corn early in March, and the second in September and October. Probably the appearance of the first brood was accelerated by the insects being kept in a warm room during the winter.

Having made accurate drawings of the insects in their several states, and written a scientific description of them, I have been trying to collect the statistics relative to them, in those parts of the country where they have heretofore appeared, with the design of drawing up for publication a memoir on the history of this depredator. Communications on the subject, addressed to me, will be very acceptable.

The moths are easily killed by the fumes of burning sulphur, and of charcoal, by steam, and by moderate heat otherwise applied. From experiments made in France, it would seem that violent agitation of the grain, continued during several hours, will destroy the insects in all their stages. I have, however, much more confidence in the application of heat, by drying the damaged grain in an oven or a kiln, heated to 160 degrees of Fahrenheit, in which the grain should remain during twelve hours.

This will effectually kill both the larvæ, or worms, and the eggs.

Proposals have been made to me to prepare another edition of my Treatise, with figures. I am therefore very desirous of obtaining the means for completing the history of two or three destructive insects noticed in the work. Permit me to ask your attention, and that of your correspondents, to the insect that bores in the pith of the locust tree, and causes the swellings of the young branches, described on page 286 of my Treatise; and also to the wheat caterpillar, of which a very imperfect account, extracted from various agricultural papers, is given on pages 445 to 457, of my work. My official duties in the University at Cambridge, have been such for some time past, as to deprive me of that leisure which the successful study of our destructive insects demands. I must therefore rely upon those of my agricultural and scientific correspondents who are interested in such subjects, to furnish me with such specimens and facts as are necessary to make another edition of this book more complete and useful than the former one has been.

In the hope that this appeal and this communication will be favourably received, I remain, very truly,

Your obliged friend,
THADDEUS WILLIAM HARRIS.

Newcastle County Agricultural Society.

At the eleventh annual meeting of the Agricultural Society of Newcastle County, held at John Hall's Hotel, Wilmington, October 15th, 1846, John C. Clark was called to the chair; and John W. Andrews appointed Secretary.

A resignation was received and read, from James Canby, declining to be re-elected president of this Society, also one from James Webb, declining to be re-elected recording secretary, both of which were accepted.

The following gentlemen were then duly elected officers for the ensuing year:

President—John C. Clark.

Vice Presidents—Joseph Carr, John H. Price, James J. Brindley, M. B. Ocheltree, Rathmell Wilson, Giles Lamboon, Philip Reybold, William Rothwell, John Jones, George Tybout.

Cor. Secretary—Dr. J. W. Thomson.

Rec. Secretary—Bryan Jackson.

Treasurer—James Canby.

Counsellor—Edward W. Gilpin.

Directors—Anthony Higgins, Samuel Canby, Z. B. Glazier, John W. Andrews, Dr. R. M'Cabe, Richard Jackson, William Ro-

binson, Henry Latimer, James N. Cleland, Henry Du Pont, J. S. H. Boies, Jesse Gregg, Philip Reybold, Jr., Wm. Tatnall, Wm. S. Bouldin, John Higgins, Francis Sawdon, Edward T. Bellah.

On motion, Resolved, that the Horticultural Society be hereafter separated from this Society, and that it be recommended to form a Horticultural Society, and that the exhibition of manufactured articles be at the same time.

On motion, Resolved, That this meeting will hold its next annual exhibition at the grove by Hare's Corner, and it is also recommended that the meeting in 1848 be held at the Brandywine Springs, in 1849 at St. Georges, and in 1850 at Newark.

The Horticultural Society having been separated from the Agricultural Society, it was

Resolved, That it is expedient to hold the exhibitions of the Agricultural Society some four weeks later than they have been formerly held; say about the second week of October.

JOHN C. CLARK, *President.*
JOHN W. ANDREWS, *Sec.*

For the Farmers' Cabinet.

To Preserve Peach Trees.

TO THE EDITOR,—In the Cabinet of August 15th, is a letter that was read at a late meeting of the Farmers' Club, in New York, concerning the mischief done to peach trees by insects, and the way to prevent their ravages. I have now peach trees full of fruit in my garden, that were recovered by the free use of quick lime around the root, after having laid them bare for some distance around the tree.

A friend informs me that he has saved a fine Nectarine tree, by pouring strong tobacco juice, boiling hot, around the roots, laid bare, and sand put around the tree instead of the earth that was taken out. These trees never bore until they were treated in this way; the leaves were yellow and apparently full of insects, and finally all dropped off.

Yours, &c.,

LOUIS S. GILLIAMS.

St. Mary's co., Md., Sep. 3rd, 1846.

COTTON IN TURKEY.—The Sultan of all the Turkeys has resolved upon an extensive experiment in the cultivation of cotton in his Asiatic dominions. Dr. Davis and Dr. Smith, both of South Carolina, have already departed for Constantinople, to make the experiments in the service of the Sultan.—*Ledger.*

The Potatoe Disease.

As the season approaches when the ravages of this disease generally make their appearance, it is desirable to know how far investigations already entered into, have proceeded towards the detection of the cause of such an evil, and the suggestion of a remedy. Little has as yet been done on any organized plan in this country. In Europe, the case has been very different. In Holland and Belgium a committee was first appointed to collect facts calculated to throw light on the nature of the disease. In one of the Dutch provinces, Groningen, a separate commission was appointed for the same purpose.

In Germany, Liebig among others has turned his attention to the potatoe, and has lately published some observations on its nitrogenous constituents.

A number of the French philosophers, both alone, and under the auspices of the Central Society of Agriculture, have also attended to the subject. M. Payen has lately published three or four reports containing the results of elaborate microscopic and chemical researches.

The English government sent a commission to Ireland, of three distinguished scientific men, with directions to obtain as much information as possible on the nature and extent of the disease. In Scotland originated the most extended scheme of all. The subject was taken up in its several branches, as it is connected with botany, meteorology, entomology, and chemistry. Each branch was referred to a competent person, and the investigation is still in progress.

It is not, as yet, even certainly determined in what form the disease first attacks the plant. A great number of observers have considered that it is first seen in patches of dark coloured fungi on the leaves, thence gradually spreading down to the tubers. Dr. Ferguson, in Paris, and several others in England, think that they have detected the sporules of the fungus passing down through the stem in the ordinary circulation of sap. But there are well authenticated instances where the potatoe tops have remained green and flourishing while the tubers were much diseased; it cannot, therefore, be said with certainty that the disease first appears as a fungus on the leaves.

All agree that the nitrogenous compounds in the tuber are affected first, and to a peculiar state of these constituents, Liebig and others have referred the origin of the disease. The starch is attacked last, and often remains uninjured when the walls of the

cellular tissue that enclose its globules are nearly destroyed. From potatoes which have become even offensive in their smell, perfectly good starch has been extracted. The manufacture of starch becomes of great importance in the economical disposition of the diseased potatoe.

The report of the Groningen commission ascribes the disease to the wetness and sudden changes of the two last years. M. Payen thinks that excessive moisture has predisposed the potatoe to yield to the attacks of fungi. Mr. Phillips, of London, has published a pamphlet, in which he ascribes the whole thing to the same cause. These are only a few of those who advocate this view of the question. All who have experienced much rain, assign this as the cause of disease, not knowing that it has been quite as bad on dry soils, and where there has been little rain. In all the west of Scotland, the summer of 1845 was considered rather a dry one, and in Islay, one of the western islands on the Scotch coast, the streams had not been so low for many years. The potatoes were as much affected in this part of Scotland as on the east coast. These facts seem quite decisive on the subject of wetness, for one well authenticated case where the disease has occurred under circumstances that preclude the idea of its being caused by wet, renders the theory quite untenable.

It is not so easy to decide whether atmospheric influence is the cause of the disease. In order to arrive at any certain conclusion on this point, extended meteorological observations are necessary. It is a singular fact that three or four counties forming the extreme northern point of Scotland were entirely free from it, without any essential difference in their season from that of the other counties, so far as was known by ordinary observers. The overseer of Mr. Fleming, of Barochan, in Renfrewshire, Scotland, lifted from one of his fields, on the 5th of September last, 1845, about five hundred weight of potatoes; these were stored in the house and remained perfectly sound at the date of his writing, in the middle of winter. From the same field on the 15th of September, were lifted five hundred weight more of the same potatoes. These, after being in the house two days, were tainted and decaying, as was the case before the end of September with all that were left in the field. In this instance, the crisis in the change from the healthy to the diseased tuber took place between the 5th and 15th of September. If the disease had shown itself at this time simultaneously in every part of that district, this fact would go far

to show that it was caused by some atmospheric influence; but the contrary was the case. In some fields it appeared as early as July, even on adjoining farms. The cause then remains still a mystery.

Of remedies, a very great number had been suggested; many without due consideration.

The commissioners sent by the English government into Ireland, were particularly unfortunate in this respect for want of a little practical knowledge added to their undoubted scientific attainments. All the means of prevention that have formerly proved successful, failed during the last year. An excellent method has been to change the seed every year, taking it from a high country to the lowlands, but this was found to have lost its efficacy. Gypsum and hot slaked lime, have also been of little benefit. The *greening* of potatoes intended for seed, by letting them lay in the sun, has been much recommended, and on cutting up the sun-burned potatoes, it has been found, according to some statements, that the greened parts were never diseased. It may be well to turn attention to this subject. In former years some persons succeeded in invigorating the crop by means of certain saline manures, and even during the last season it was thought that they were in some degree beneficial. We are not aware that any plan heretofore suggested, has proved uniformly successful over any great breadth of country.

The preservation of the crop during the winter has excited the deepest interest, and here also the number of methods proposed defies enumeration. The result of all the trials seems to be that the disease makes very slow progress, and in many instances none at all, when the potatoes are kept *perfectly dry* and *well ventilated*. Both of these conditions seem absolutely essential; packing them in dry absorbent earth, and even in charcoal, has proved a signal failure. It is necessary in any case where the disease has made much progress to pick over the heaps frequently, and carefully select all of the affected tubers. Kiln-drying has been resorted to in cases of extremity; this preserves the potatoe for food, but of course destroys its vitality.

Of the various plans proposed for the planting of potatoes in spring, none has been found more efficacious than cutting carefully selected potatoes into sets, containing each two or three healthy eyes. These sets are sprinkled with sulphuric or hydrochloric acid, diluted in the proportion of one pound of acid to four gallons of water. Newly slaked lime, or gypsum, is then

added so as to form a crust over the cut surface.

The diseased potatoes have not been found injurious as food. In Scotland all kinds of domestic animals have been fed with them freely, and actually thrived upon them. We have, in the present communication, glanced merely at the principal points of interest hitherto touched, in the researches upon this subject; it is much to know which are false theories, even if we have made little positive advance.

Prof. Johnson, in a late communication, has informed us that from attentive consideration of the analyses of diseased and healthy potatoes made in his laboratory during the past year, he has been led to recommend the application of a certain manure to the potatoe crop, as calculated, in many cases if not universally, to arrest the disease. He does not speak of this with confidence, but as a thing yet to be tried. The publication containing his paper has not yet reached us, and we are consequently unable to say more.

We are forced to conclude that the origin and causes of this disease are at present unknown; its mysterious marks have appeared suddenly on two continents, separated by two oceans; under the heat and drought, rain and cold, on wet and dry, light and heavy soils, at every elevation, and in every variety of potatoe. Those who have most carefully investigated its peculiarities, most widely examined its range, are most undecided as to its cause.

Only by a very long and extended series of experiments, by an accumulation of accurate results, can we hope to arrive at a solution of the mysterious problem. No subject of the present day offers more attractions to the scientific man, or a wider field of usefulness. The very existence of a crop of incalculable importance seems at stake; practice has entirely failed in its efforts to correct the evil, and looks to science for that aid, which, if within the limits of possibility, should be afforded.—*Silliman's Journal of Science and Arts.*

NEW MATERIAL FOR SHINGLES.—A patent for a new invention has been obtained by Mr. William Beach, of Troy, for the application and mode of using cast-iron plates for covering roofs. "They are about one foot square, and made to fit into another, so as to render the roof water tight, by applying white lead to the joints. It can be afforded at sixteen cents the square foot, and comes at about half the cost of copper. They weigh $3\frac{1}{2}$ pounds a square foot." It is easily attached to the roof, and promises to be of much utility.

Gathering and Packing Fruit.

ABOUT the autumn of the year 1896 or '87, I had some thirty or forty barrels of apples to pick.

In the orchard with some other fruit trees were some Newtown pippin trees, and all in a shocking state of neglect. As it had been let run wild, I set about to clear it up, and make it productive. In March I had the trees scraped with a dull hoe, to which I had put a short handle, to make it the more handy to scrape off the outside dead bark; after this, having trimmed the boughs and branches, I sent to town for a barrel of soft soap, with which I intended to smear the stems and branches of the trees, but when it came, judge of my surprise to find that the soft soap of New York is made of a little of the commonest grease, very little alkali, some salt, and a vast amount of water, making a quivering jelly;—such is the villainous compound called soft soap in New York;—as this was unfit for my purpose, I had to make some myself. With this in a bucket and an old whitewash brush, I sent a man into the orchard to smear all the stems of the fruit trees, and all the other trees which stood near by, knowing or thinking the little depredators I wished to be rid of, might lurk under the bark of any tree that stood in the orchard, or near it, as well as in the fruit trees. It was a "bearing year," as farmers call it, and there was a great crop of apples; and I had very few wormy ones. We picked the apples by hand, and did not pour them from one basket to another without putting soft hay or oat straw between them. While pouring them we put straw on the floor of the room in which they were stored; there was also straw put on the bottom of each basket, and on the bottom of the cart we carried them in; all this was done to keep them from bruising. After they were all housed, we set to work to sort them, rejecting all which had any defects, and if damp, wiping off the moisture. We next took each apple and rolled it in coarse clean paper, any soft paper will do—the paper I bought was common wrapping paper, straw paper will answer. The paper had this effect—it keeps the apples from rubbing each other, and keeps them at a certain degree of moisture, not allowing them to evaporate or receive damp. In the bottom, and around the sides of the barrels, a small quantity of straw was placed, and the apples laid in, one at a time, and as close to each other as they possibly could be, without jamming them. When the barrel was filled, a little more straw was put on the top, and the head of the barrel put in,

with an inside lining hoop, to keep the head from being knocked in, by accident; there was besides a lining hoop put in the bottom head of the barrel, before I commenced packing. These apples were put up to order, and were to go to Sheffield, in England. After taking all these precautions, I wrote a direction to this effect:

"These barrels of apples are not to be rolled or tumbled about; if carted, or sent any way by land, something is to be put on the floor of the cart or wagon, so as to keep them from being bruised, rattled, or jolted."

The apples when packed in this way, were tight in the barrels, and could not be made to rattle with common usage. M. C. W., who ordered them, informed me that they arrived at the destined place, and were all sound to an apple, and much admired by the consignee for their preservation and manner of putting up. I took the lesson from seeing the oranges and lemons which arrive here from Spain and Portugal, packed in the same manner.

Those apples which have a close tight skin, will keep the best for the greatest length of time. Of this kind are the Newtown pippin, the Lady apple, the Russet: besides, there is the real Rhode Island Greening, which may be kept until the May of the next year.

If the precautions which I have laid down are strictly attended to, any of these may be sent to England as well as the pippin; but the greening is not so good an apple to keep. People may talk as much as they have a mind to about the heat and damp of ships, and so on, being the cause of the apples rotting; but who could expect that an apple, or any other fruit or vegetable could be kept from it, if jammed or bruised constantly.—*Farmer & Mechanic.*

Agricultural Fairs.

We would invite the attention of some of our farmers to the following remarks of the Tribune. Strangers sometimes perceive our errors more quickly than we ourselves do, and their hints are worthy of all respect.—*Ex.*

Auburn, Wednesday, Sept. 16th, 1866.

THIS is the great day of the Fair, and a brighter, pleasanter, was never enjoyed by mortals. The cloudless sky and the fresh green earth harmonize in producing rare external beauty and cheerfulness; the show-ers of night before last, have cooled the atmosphere just sufficiently; the people of central and western New York have assembled by tens of thousands, and still every train, every thoroughfare teems with hundreds more pouring in. Never did nature

and man more cordially concur in giving zest to a popular holiday.

I have been over the grounds, of course, seeing much to interest, and but for the enormous multitude gathered, which seems to me unparalleled at any former Fair, I should have seen much more. I could say something of the animals here exhibited, but believing Col. Skinner can speak of them to better purpose, I leave them to him. For the present, I will proffer a few suggestions on the influences and uses of these annual fairs, or rather a few thoughts which this one has elicited.

Mental indolence is the chief danger of the farmer's condition. It is possible to exist in his vocation with very little thought. Ploughing this year and next the fields that were ploughed, perhaps by his father, thirty or forty years ago, and harvesting therefrom, substantially, the same grains and vegetables, the farmer is in danger of falling into the habit of doing just as his father did, and for the reason that his father did it. The old round of crops, the old modes of culture, the old implements, even the old smoky and fuel-wasting fire-place, are too often clung to, because the farmer is hardly aware that newer and better means to the same ends have been devised and adopted. It seems easier to do the old things in the old way, than to incur the expense and trouble of changing for the better, even if aware of its existence.

The moral of the fair is improvement. Fifty thousand farmers and farmers' sons, with ten thousand farmers' wives and daughters, assemble once a year to witness an exhibition of the choicest products of their calling in our State. He who has the counterpart of Pharaoh's lean kine, finds at the Fair the noblest display of neat cattle ever seen; so of horses, sheep, swine, &c. Of fruits and grains, there is like abundance of the best. Is it possible that he who has dregged on contented with ten to twenty bushels of grain to the acre, perhaps with two or three varieties of ordinary fruit, perhaps with little or none, should be content to go on in that way? When he sees, as he may here, squashes weighing 148 pounds each—five that grew on one vine weighing over 500 pounds—can he go home satisfied to grow those of a tea-kettle size only? When he sees that other farmers have a profusion of pears, peaches, grapes, quinces, &c., from a few acres of land, will he jog on with his orchard of middling apple trees only? It seems hardly possible that one farmer, who ever thinks at all, can go away from the State Fair without resolving to be a better farmer thereafter; without feeling a

truer pride in his calling, and a firmer resolution to improve and excel in it.

But this is not all. The farmer is here brought in contact with all that has recently been done in the other useful arts in aid of his own calling. Here is an endless variety of agricultural implements—fanning mills, cradles, scythes, forks, hoes, &c. &c.; as also household utensils, stoves, ovens, kitchen-ware, &c. There are not less than a dozen newly patented stoves alone, some of them valuable improvements on those exhibited last year. Everything invites to comparison, to reflection, and thence to improvement. In the plough alone, the improvements of the last few years have secured the ploughing of four acres with the labour and power formerly required for three. And the end, doubtless, is not yet. One such Fair as this is worth more to the people of a State than a dozen "glorious victories" in the field of human slaughter.—*New York Tribune*.

The Poplar—the Tulip-bearing *Liriodendron*.

Liriodendron tulipifera.

Of all the deciduous trees of North America, the Tulip-tree, next to the Sycamore, (*Platanus occidentalis*), attains the amplest dimensions; while the perfect straightness and uniform diameter of the trunk, the more regular distribution of its branches, and the greater richness of its foliage and flowers, give it a decided superiority over that tree, and entitle it to be considered one of the most magnificent productions of the temperate zones. It usually attains a height of sixty or eighty feet, with a diameter varying from eighteen inches to three feet; although, in favourable localities, it has been known to arrive at a height of one hundred and twenty to one hundred and forty feet, with a diameter of more than seven feet. The bark of the trunk, till it exceeds seven or eight inches in diameter, is smooth and even; but afterwards it begins to crack, and the depth of the furrows is in proportion to the size and age of the tree.

The southern extremity of Lake Champlain, according to Michaux, may be considered in its natural distribution, as the northern, and the river Connecticut as the eastern limit of this tree. It is only westerly of the Hudson, and southerly of the forty-third degree of latitude, that it is frequently met with, and fully developed. It is multiplied in the middle States, in the upper parts of Carolina and Georgia, and still more abundantly in the Western States, particularly

in Kentucky, where it displays its most powerful vegetation. Its comparative rareness in the maritime parts of the Carolinas and of Georgia, in the Floridas, and in lower Louisiana, is owing less to the heat of summer than to the nature of the soil, which, in some parts, is too dry, as in the pine-barrens, and in others too wet, as in the swamps which border the rivers. It is commonly found mingled with other trees, such as the hickories, the black-walnut, and butternut, the Kentucky coffee-tree, (*Gymnocladus canadensis*), and the wild cherry-tree; but it sometimes constitutes, alone, considerable tracts of the forest, as was observed by the elder Michaux, on the road from Beardstone to Louisville, in Kentucky. The artificial geography of this tree may be said to embrace the middle region of Europe, from Berlin and Warsaw, on the north, to the shores of the Mediterranean and Naples, on the south; Ireland on the west, and Crimea on the east. It is successfully cultivated along the maritime parts of the United States, from Newburyport, in Massachusetts, to St. Mary's, in Georgia.

The period at which the tulip-tree was first introduced into England, is uncertain. The honour is said to have been conferred on the Earl of Norfolk, as far back as 1663. It is certain that it was cultivated by Dr. Henry Compton, at Fulham, in 1668, at which time it was wholly unknown as a timber-tree. According to Miller, Mr. Darley, at Hoxton, and Mr. Fairchild, were the first who raised this tree from seeds; and from their nurseries it is probable that the numerous old trees which are spread all over Britain were procured. The oldest tree in England, estimated at over one hundred and fifty years of age, is at Fulham palace. It is about fifty feet high, and its trunk, at one foot from the ground, is three feet in diameter. The largest tree in Britain is in Somersetshire, at Hestercombe, which is one hundred feet in height, with a trunk three feet in diameter, and ripens seeds every year.

The first notice which we have of the tulip-tree on the continent, is in the "Catalogue of the Leyden Garden," published in 1731. From the number of these trees existing in France, the south of Germany, and Italy, there can be little doubt it spread as rapidly in those countries as it did in Britain. Public avenues are planted of it in Italy, and as far north as Strasburg and Mentz. It stands the open air at Vienna, and attains a large size there; but it will not endure the climate north of Warsaw, nor Moscow, without protection. In the grounds of the palace of Lâcken, near

Brussels, there is a tree which has a clear stem three feet in diameter, with a compact globular head. When Lâcken belonged to France, the palace was occupied by the Empress Josephine, who brought her gardener from Paris; and the poor man, while he was gathering seeds from this tree, fell from it, and broke his neck. At Schwöbber, near Hanover, there is growing, in alluvial soil, near water, a tree more than one hundred and twenty years old, and eighty feet in height, with a trunk two feet in diameter, and an ambitus of thirty feet. In Italy, the tulip-tree attains a height of seventy or eighty feet, flowers freely, and ripens seeds every year.

The elder Michaux measured a tulip-tree, three and a half miles from Louisville, Kentucky, which was twenty-two feet and a half in circumference five feet from the ground, and from one hundred and twenty to one hundred and forty feet in height. In 1842, there was felled from the estate of Mr. John Lewis, in Llangollan, Kentucky, a tulip-tree eight feet in diameter near the ground, and five feet in diameter seventy-five feet above. The trunk was perfectly straight and sound, and was sawed into boards of common lengths.

At Green Point, Bushwick, near New York, on the estate of Mr. N. Bliss, there is a tulip-tree which has a circumference of twenty-one feet at three feet above the ground, and a height of seventy feet.

In 1807, there existed a tulip-tree in Hamilton, Adams county, Pennsylvania, noticed by John Pearson in a communication to Dr. James Meece, in the "Memoirs of the Philadelphia Society for promoting Agriculture," for that year, which had a circumference of thirty-six feet, with a trunk thirty or forty feet to the forks, a large head, and to all appearances, perfectly sound. In the same work he mentions another tree as growing near the Virginia head of the river Roanoke, which was thirty-nine feet in circumference four feet from the ground, apparently sound, and about forty feet to the forks.—*Browne's Trees of America.*

Experiments with the Pear upon the Apple.

The following account of experiments made by T. S. HUMPHREYS, of Cashoeton, Ohio, we take from the Magazine of Horticulture, a work we frequently find ourselves extracting from, and as we trust to the benefit of our readers. It is not successful experiments alone that are available to the practical farmer or gardener: we want as well to be advised of failures, as of attempts that have succeeded in our hands. Thus time, labour and expense may be avoided: and

thus we may be stimulated to greater care than others, and hope that this extra care may be rewarded with superior success.—*Do.*

In the spring of 1838, I commenced a series of trials of the pear upon the apple, in the nursery, by the method of root-grafting, which were continued up to 1844. The roots employed by me were of thrifty seedlings two years old; and were from half an inch to three-quarters of an inch, or perhaps one inch in diameter. They were pulled up from the seedling bed shortly before they were wanted; and at the time of grafting, were cut into suitable lengths of four to six inches, with more or less side and fibrous roots as might happen. The scions generally contained three buds or eyes, and might be two to four inches in length, depending upon the distance asunder of the buds or eyes. After the operation was performed, and they were planted in the nursery rows, the top of the stock would be three-quarters of an inch to one inch and a half below the surface. The soil in which they were set was a rich sandy loam. I am thus particular, in order that the means may be afforded, if desirable, of forming an estimate, of the probable influence the attendant circumstances may have had upon the results.

The number grafted and set out, at the first trial in 1838, was eight grafts, about one half of which grew the first season, but died the second and third.

The number grafted and set out at the second trial in 1839, was seventy-six, of which nine were a seedling variety, twenty Pound, one Catharine, seven Green Chissel, two Seckel, three Easter Bergamot, eight Doyenné Blanc, nine St. Germain. Of the whole number, about one half grew the first season. The Doyenné Blanc and St. Germain failed entirely. One graft of Easter Bergamot grew, appeared thrifty, but died suddenly the latter part of the second summer. Two of the Green Chissel grew—one blossomed from top to bottom in the nursery the third spring, and died the same season; the other died in transplanting. The two Seckel grew; one I have lost sight of; the other I gave to Mr. William K. Johnson of this place, who planted it in 1842 against the south wall of his house, which is of brick, and trained it by the fan method. The situation did not suit it. It blossomed every year, but the heat from the wall always forced it into bloom so early in the season as to be always killed by frosts. In November last, Mr. Johnson removed it to the garden. In the spring it blossomed at the usual time, and has perfected two pears this season. The fruits thus produced were

more than double the usual size of the Seckel, of a pale green colour, having the appearance of being covered with a faint whitish bloom, and were perfectly melting, exceedingly sweet, juicy, and fine grained, without any grittiness whatever. Their greatly increased size and altered appearance, from what the Seckel usually is, induced the Hon. James Mathews, who is an amateur, and who saw the fruit while yet upon the tree, to doubt their being that variety; and it is proper to state, that the tree from which the scion was taken, was procured from a nursery at Wooster, and died before fruiting. Having seen, however, what Mr. Ernst has somewhere stated of the increased size, &c., of the Seckel when grafted on the apple, I do not doubt, in this instance, its being true to name. The tree at Mr. Johnson's stands in a somewhat shaded situation, is healthy, retains the fan shape given it by him, is a dwarf in habit, being now about five feet high and as many wide, and remains upon the apple root without having thrown out any of its own. Of the other trees grafted at this time, some, the second and third seasons of their growth, became so dwarfed and stunted as finally to die. Four or five of the residue were, in 1842, transferred to the orchard, and are still alive in different states of thriftiness. I have not noticed that any of them have made roots of their own, and think they have not. The orchard to which they were taken is some miles from town, and hence they have not received from me the attention they otherwise would. How they may eventually succeed remains to be seen.

In 1840, I tried some scions sent me by Mr. William Kenrick. The number set was forty-eight, as follows:—five Beurre d'Aremberg, four Williams's Bon Chrétien, six Pound, four Beurré Diel, four Capiaumont of Boston, five Bezi Vaet, four Easter Beurré, four Duchesse d'Angouleme, four Napoleon, three Urbaniste, five Passe Colmar. Of these, Beurré d'Aremberg, Beurré Diel, Duchesse d'Angouleme and Napoleon failed entirely. Two of the Passe Colmar grew, and after remaining stationary, or nearly so, during their second and third seasons, at length threw out roots of their own, on which they have now become established, the apple root having entirely rotted away and disappeared from them. They are now thrifty trees. One only of the Capiaumont grew. It made about the usual growth the first season, and afterwards remained stationary until the present season. It now appears to be establishing itself upon its own roots, and has this year thrown up a thrifty shoot. One only of the Urbaniste

grew. It also remained stationary until last season, when it formed roots of its own, upon which it is now established and doing well. Four Easter Beurrés grew. The two largest then apparently thrifty, were removed last spring a year ago to the orchard and died. The two left in the nursery are low—not more than two feet high—scraggy, and have made no new wood the last three years, but have blossomed each of those years. They all remained upon the apple roots. Two Bezi Vaets grew. One remaining in the nursery, has established itself upon its own roots, and is a fine thrifty tree. It, too, did not grow much till the two past seasons, but both the past seasons it has grown as rapidly as any tree that has ever fallen under my observation. The other Bezi Vaet was removed last spring a year ago, to a grass plat in front of my house. The top died down within two feet of the ground, and it has made no new growth of wood since transplanted, though it has now two pears upon it which appear to be swelling out finely. It remains upon the apple root. Two of the Williams's Bon Chrétien grew, and have done the best of any remaining upon the apple, as they still appear to do. One of them was removed a year ago, to the yard, and this year fruited. But one pear remained to ripen upon the tree, which was much smaller than it should be, and deficient in flavor. The other tree, still in the nursery, is thrifty, and produced this season a dozen or more pears of fine appearance, which were stolen by the boys about the last of July. Neither of these two trees has ever exhibited any appearance of being dwarfed by the stocks, but on the contrary, promise to make standard trees.

In 1841 I grafted and set out in the same way, fifty-nine trees, of which eight were Green Chissel, fourteen Easter Beurré, and thirty-seven Seckel. The Green Chissel all failed. Five or six of the Easter Beurré grew, but have done nothing since the first and second seasons. They are, to all appearance, of no use whatever. About three-fourths of the Seckel grew, and of these about one half are thrifty, and give promise of doing well. Some of them have been given away by me, and others transplanted.

In 1842 I grafted and set out in the same way, one hundred and seventeen, of seven varieties, about one-third of which grew. Some varieties failed entirely. Of those that grew, the Pound, Easter Beurré, and Williams's Bon Chrétien appear to do the best, and about one-third of them are doing tolerably well. I have not ascertained that any of these have as yet made roots of their own, but think they have not. Last year I

removed one, a Salviati, to the yard. It grew the first season after transplanting. This year it again leaved out, but is now dead. It remained upon the apple root.

The number grafted and set out in 1843, was seventy-two, of which thirty-seven were Williams's Bon Chrétien, and thirty-five Easter Beurré. About one half of them grew. They appear to have done better, upon the whole, than any former trial, and a number of them are now of fine size for transplanting to the orchard. I cannot say that any of them have made roots of their own. Since 1843, I have not grafted any pears upon the apple.

You have now before you my experiments and their results, as far as they are yet apparent. Each one is left to draw his own conclusions from them. For myself, I do not regard them as complete enough to lay down anything as absolutely determined by them. It will not, however, be going too far to say that their tendency is strongly to show, that root-grafting the pear upon the apple cannot be relied upon by nurserymen for propagating the pear; unless some means be found by which a much greater proportion, in any given number, can be made to grow and establish themselves upon their own roots than the foregoing experiments indicate. Whether this is attainable or not, future trials must determine. I would suggest, in order thereto, that the scions to be used should be six to seven inches in length, and that when planted in the nursery, the top of the stock should be three to five inches under the surface of the soil.

For the Farmers' Cabinet.

Lime for Potatoes.

MR. EDITOR.—In your last No., page 92, you recommend lime for potatoes. Having noticed the action of lime on potatoes, I deem it proper to make a few remarks upon the subject. I have noticed that in many instances the disease is worse where lime has been used, than where nothing had been applied: and I will account for it in such a manner as to show you why this is so. Lime is much used by the potatoe when it can get it, for the formation of the tops. Where much lime is applied on potatoes they have very large tops. These large tops open so many more mouths to suck in carbonic acid, which, if the tops were small, would not be the case. This extra quantity of carbonic acid, so absorbed by the large tops, insures the disease, when, perhaps, the small tops, with their smaller means of absorption, would not be able to take in enough to kill the plant and disease the root. I have seen

this during the past season. A potatoe grower in this neighbourhood, placed a small quantity of old lime—or carbonate of lime—on his potatoes at the time of planting; this carbonate of lime was just sufficient to enable the plant to develop the tops finely. The large tops absorbed large quantities of carbonic acid, and death and decay followed in both top and root. Another potatoe grower put nothing on his patch—as a consequence the tops were small, and not taking in much carbonic acid, they stood until quite late, when they too were killed, but the roots were saved.

It is difficult to apply lime to the potatoe with the certainty of its proving effectual in preventing the rot; because, in the first place, the tops use much, if not all of it, for increasing the size of the tops, thus exposing the plant the more to the disease, instead of protecting it from that evil; and in the second place, if there be more lime used than the plant can appropriate to the tops, the remainder becomes highly charged with carbonic acid early in the season, and holds it with such tenacity that the plant cannot get the alkaline principle without getting the acid too; thus preventing the alkaline principle from neutralizing the carbonic acid, which is destroying it.

The best way I know of to apply lime to potatoes, is to take old lime which has been air slacked, and apply about a gill to each hill of potatoes at the time of planting. In the fall, when the potatoes are dying with the disease, put on, every few mornings, when the dew is on, *fresh water slacked lime*. It should be slacked on the very morning it is used, because the longer it is exposed to the air the more carbonic acid is absorbed by it, and its useful qualities decreased. Fresh slacked lime is excellent to put on potatoes after they are dug up, when they are diseased.

But the best alkali for potatoes is potash, as contained in wood ashes. The tubers seem to prefer this alkali to lime, while the tops in a great measure prefer lime to potash. These ashes may be scattered over the potatoe field about the time the young tubers are beginning to form, and every few mornings, when the tops show signs of the disease. I have seen, with unbounded pleasure, the highly useful effects of this valuable fertilizer. Much reliance should be placed on the fall application, because much of the alkaline principle is apt to be washed away, either down deep in the ground, below the reach of the roots, or to another part of the field, while it should remain near the plant.

Ashes will abundantly repay considerable

cost in procuring and applying them, and no potatoe grower should think of dispensing with their use. Dr. Lee, of New York, who was employed a year or two since by the New York State Agricultural Society, to go to each county in the State and deliver lectures on Agriculture and its kindred sciences, wrote several letters during his tour to the editor of the Cultivator. In one of these letters, written from Smithville, Chenango county, N. Y., under date of July 15th, 1845, he says: "A sugar maple, a grape vine, an apple tree, and a potatoe plant, need a soil that abounds in potash. Take from your field 200 bushels of potatoes this fall, and you will remove from it sixty-three pounds of this mineral. One bushel of ashes—by those that have used them—are said to make ten extra bushels of potatoes."

You may now count the cost of the ashes and the value of the potatoes, and be enabled to judge of their importance. They would always produce well when the disease is prevalent, and if the ashes be good and applied in the fall, and the disease great, I have but little doubt that they would produce even more than is mentioned above. I cannot too strongly recommend their use. Let every potatoe grower build himself a nice ash-house, of such material as to resist fire, and let him preserve and use all the wood ashes he can procure, until he has sufficient for his purpose.

CHEMICO.

Willkesbarre, Oct. 30th, 1846.

Address of Dr. William Darlington, &c.

MR. PRESIDENT: Ladies and Gentlemen of the Chester County Horticultural Society:—The committee appointed to procure a competent person to address you, on this occasion, have, as you perceive, been rather unsuccessful in their efforts. It was their wish and intention to provide a discourse worthy of the subject in which you take so lively an interest; but failing in that, they have to solicit your indulgence for the hasty *substitute* now about to be offered. The duty of preparing that substitute, having been unexpectedly, and at a late hour, assigned to me,—I should certainly have shrunk from the task, had I not felt that it would seem most ungracious in a professed admirer of plants, to refuse a co-operation, in any capacity, with those who have associated expressly to promote the culture of favourite *Fruits* and *Flowers*. The *theme*, moreover, is a rich and prolific one; and he who cannot be in some degree

degree inspired by the contemplation of its charms, must be

* * * "duller than the fat weed
* * * on Lethe wharf."

I shall therefore venture to trespass on your good nature, by submitting a few desultory remarks which have occurred to me, in reference to the objects of this Society.

Horticulture, in the comprehensive sense in which the term is now understood, is unquestionably one of the most elegant and refined—as it is one of the most interesting—of earthly pursuits. It has for its especial objects, the production of the choicest fruits and vegetables—the training of the most ornamental trees and shrubbery—the culture of the sweetest and most beautiful flowers—and the arrangement of the whole in accordance with the principles of a refined, disciplined, unsophisticated taste. It involves, in short, all that is connected with comfort and beauty around our dwellings—all that can gratify the palate, delight the eye, or regale the most fastidious of the senses. As an *enlightened Agriculture* indicates a superior stage of civilization, in the march of human society—blending, as it does, scientific illustration with every utilitarian process,—so a *perfect Horticulture* may be regarded as the crowning attainment of an intellectual and polished people. To borrow a simile from one of the noblest of the arts,—the employments of man in the successive stages of his advancement, may be compared to the principal orders of ancient architecture. In the *savage* or *hunter* state, we find the rude unpolished strength of the *Tuscan* order. The same rude vigor, with the higher finish and symmetry of the *Doric*, is seen in the *pastoral* stage. The combined strength, stateliness, and graceful tounure, of the *Ionic* order, may be considered as the type of the enlightened *Agricultural* stage; while the elegant science of *Horticulture*—the employment and the recreation of man in his most elevated condition—may be regarded as the finishing accomplishment of society—the *Corinthian* order of human attainments and pursuits. Dedicated to the culture and improvement of the choicest productions of the vegetable creation, it is a pursuit which requires the united qualifications of practical dexterity and scientific skill—with a correct perception of the appropriate and beautiful. And while it thus exacts and promotes the highest mental accomplishments, it at the same time represses the more sordid or grovelling passions, and cherishes the purer aspirations of the human heart. What can be more propitious to

elevation of thought, or more congenial with purity of mind—when rightly considered—than the varied attractions of an elegant garden? It is the place of all others, of a temporal character, best fitted to refine the feelings and sublimiate the affections. A garden was the spot selected by Divine Wisdom as the appropriate residence of man, while in the state of primeval innocence: and if ever, on this earth, man should so far improve as to qualify himself for a *Paradise regained*, we may fairly infer that the scene of his terrestrial bliss will again be a perfect and beautiful garden.

That the habitual association with interesting plants and flowers exerts a salutary influence on the human character, is a truth universally felt and understood. No one ever dreams of any possibility of mistake, in estimating the disposition of those who delight in gardens, rural walks and arbours, and the culture of elegant shade trees and shrubbery. Who ever anticipated boorish rudeness, or met with incivility, among the enthusiastic votaries of *Flora*? Was it ever known, that a rural residence, tastefully planned and appropriately adorned with floral beauties, was not the abode of refinement and intelligence? Even the scanty display of blossoms in a window—or the careful training of a honey suckle round a cottage door—is an unmistakable evidence of gentle spirits and an improved humanity within. There may, possibly, be natures so gross, as to be incapable of perceiving the beauties of the vegetable creation, and altogether inaccessible to the influences of genuine taste,—as it is said, there are persons insensible to the charms of the sweetest music. But I can only imagine the existence of such unfinished specimens of our kind, as the rare exceptions, which logicians say are the strongest proofs of the general rule. They must, indeed, be the veriest clods that ever fell, untempered, from *auld Nature's 'prentice han'*. Shakspeare, as you know, tells us—

"The man that hath no music in himself,
Nor is not mov'd with concord of sweet sounds,
Is fit for treasons, stratagems and spoils."

Now, if such be the character of the man who is so unfortunate in relation to the pleasures of a *single sense*, what shall we say of him who cannot appreciate the delights of a rich and beauteous garden? delights which appeal so directly to *each* of the senses—and minister so exquisitely to *all the five*? I should say, he was not fit even for "*spoils*,"—which, I believe, is the lowest qualification recognized at the present

day: and I would heartily concur in the judgment pronounced by the bard:

"Let no such men be trusted."

Such, then, being the nature, the influences and the tendencies of *Horticulture*, in the comprehensive and just acceptation of the term, it is an occasion of sincere congratulation, to see the citizens of this ancient county awakening to a perception of its benefits, and associating to promote its advancement. Having, by their skill and industry, made the *agriculture of Chester* the admiration of all observers, it next becomes an urgent duty to make their gardens, their orchards, and the lawns appurtenant to their dwellings, correspond with the beauty and excellence of their farms. The time, indeed, has fully arrived, when such a movement is due to our character as a community: for candor will oblige us to confess, that while our *farming* has been managed with commendable skill and neatness—we have been sadly neglectful of our *Horticulture*—that elegant department of the profession, which is the crowning attainment of an accomplished agricultural people. The true science of gardening does not come by intuition; but is to be acquired by a rational and studious attention to the operation of established laws. The art of increasing the size and improving the quality of vegetable products,—to be completely successful—demands a close observation of natural phenomena, and an intimate acquaintance with the physiology of plants. The influence of *culture* and *soil* upon vegetable development, is a most interesting problem, which has not yet been thoroughly solved, and is generally, in fact, but little understood.

Those plants which have been long under cultivation, are continually undergoing modifications in their tissues, and producing variations of form, dimensions, texture, colour, or flavor. This phenomenon is especially remarkable in some old favourites, which have been carefully nursed for ages; such as the *Rose* and the *Tulip*, among flowers,—and the *Pear*, the *Apple*, and the *Peach*, among fruits: and it is by watching this process in the vegetable economy—by a skilful selection and management of the *best varieties* thus produced, that the apparently accidental features and qualities are *fixed*, or become permanent; establishing what are called *races*, in the language of Botany. It is in this way that the countless sorts of our choice fruits and vegetables have been obtained. They are all mere progressive developments or modifications of a few wild unpalatable *originals*, which have been gradually tempered and melio-

rated by the influences of a kindly nourishing soil, a propitious situation, and a continued skilful treatment. The sagacious gardener avails himself of those occasional developments, and by a careful culture, perpetuates beautiful forms or valuable qualities, which otherwise would be as transient as the individual specimens in which they occur.

If an excellent variety happen in a woody perennial—such as a *fruit tree*,—the original *tree*—and of course the identical sort of *fruit* may be multiplied indefinitely, by the process of *budding* or *engrafting*. If it occur in a herbaceous or annual plant, it may often be perpetuated as a distinct sort, or *race*, by a proper attention to the culture, and a careful selection of the fairest seeds for planting. This truth is constantly exemplified in the preservation of distinct varieties or races of cultivated *grains*—such as *bearded* and *beardless wheat*, white wheat, red chaff, &c.,—and also in numerous *garden vegetables*, in which the peculiarities are fixed, and transmissible to future crops by the *seeds*. The character of the best varieties yet known, may doubtless be still further improved by the continued influence of appropriate management; as is evinced by the specimens annually exhibited by the various Horticultural societies.

That these important facts and principles have been but little heeded or considered by a portion of our people, is too obvious to be denied. We are bound in honesty to admit, that while our agricultural fellow citizens may justly pride themselves on the condition and products of their *fields*, numbers of them have been utterly neglectful of their *orchards* and *gardens*; and have discovered no manner of taste in the arrangements around their dwellings. There are yet too many instances in Chester county of tolerably cultivated farms, on which there is scarcely any *other* visible evidence of improvement;—no horticulture—except a paltry, weedy, neglected kitchen garden; no well-selected orchard of fruit trees; no green sward, nor clustering flowers, nor ornamental shrubbery, around the farm-house; not even a friendly shade-tree, to protect the dwelling from the glare of the summer's sun. Too often we may see the residence of a substantial farmer naked and broiling, as it were, in one of his open treeless fields,—without so much as a palisade to keep the stock at a respectful distance from his doors—the persecuted cattle contending hopelessly against a swarm of flies under the windows of his sitting-room, and crowding, as to a place of refuge, into the narrow shadow afforded by the building itself; while the

unringed swine are either wallowing in the drain of the kitchen, or wantonly rooting up the footway at the very entrance to his domicile!

How repugnant is such a scene to every idea of refinement and comfort! How offensive to every corporeal sense—as well as to every sense of moral fitness and propriety! What can be expected from a family, raised under circumstances so unpropitious to the formation of a correct taste, or the cultivation of the finer feelings! The children so brought up, may, indeed, be fitted to migrate from such a home, and be prepared to exchange it, without regret, for the rude accommodations of our wild frontiers: but they can have no conception of the sentiments inspired by lovely scenery around the paternal mansion. They can know nothing of the charms and abiding moral influences of a pleasant homestead upon the susceptible minds of the young. Their early years being thus destitute, they will necessarily be strangers to those precious associations, by which memory renews the delights of a happy childhood, and links the dreamy enjoyments of youth with the sober realities of after life. But, at the present day, there is really no excuse for any such culpable improvidence—such boorish negligence of all that can adorn a country residence, or afford the comforts of a rural home.

There is no necessity in this climate and country, for any family to be destitute of the luxuries derived from the garden and the orchard; and consequently no apology can be offered for those sluggards, who neglect to plant for themselves—and yet, in the season of fruits, have the assurance recklessly to trespass upon their more provident neighbours. Such persons do not merely violate good manners by their rudeness; they train up those about them with exceedingly loose notions of moral honesty. It is high time there was a reformation wrought among such people; and I firmly believe there can be no agency devised so efficacious in promoting that reform, as institutions of the kind which I have now the honour to address. They propose, by a general co-operation, to make the culture of vegetable delicacies so universal and so productive, that there shall be neither pretext nor motive for the plundering of orchards and gardens. They demonstrate the practicability of their generous purpose, by the most encouraging *examples*; and good examples, happily, are sometimes *contagious*, as well as those which are evil. We may, therefore, reasonably hope to see a decisive movement among our people in reference to gar-

dening and the cultivation of choice fruit. I hold that every farmer, great and small, every occupant of soil, whether he reckon by acres or by perches, is bound to plant and provide the products of the orchard and garden, in justice to his neighbours, as well as to his own family: and they can *all* perform that obvious duty, if they choose. There is nothing wanting to effect that desirable object but the *will*; and a correct public sentiment would avail much in controlling and regulating the volitions of the inconsiderate. There is scarcely a householder in the community, who does not occupy a lot sufficient for a garden, or who has not room for a few select fruit trees. It is a mere idle pretext, for any one to allege that he has no *space*, nor *leisure*, for their cultivation. I doubt whether there be a tenement in the land—there surely need not be—which has not ground enough annexed to admit, for example, a Peach tree, a May-duke cherry, an Apricot, a Pear tree, and a Grape vine. These are the fruits so universally and eagerly run after in their season; and one or more of these popular favourites could certainly be accommodated about the humblest cottage in Chester county. It will never do, therefore, for those who can find time to rob the orchards of their neighbours, to pretend that they have not leisure to plant a tree or two at their own doors. Such unworthy practices and dishonest subterfuges, should be promptly shamed, or frowned out of existence.

I have thought I could already perceive, in our vicinity, evidences of a growing disposition to cultivate both useful and ornamental trees and shrubbery. Unquestionably, as the exhibition before us abundantly demonstrates, there has been a decided advance in the production of choice garden vegetables,—and in the taste for cultivating rare and beautiful flowers. For this improvement, we have been chiefly indebted to the labours and example of the spirited pioneers, who prepared the way for the establishment of this Society. These public benefactors have presented us with new views of what may be done for a community, by an enlightened Horticulture: and were it not for the awkwardness of personal allusions, in the presence of the parties, I should be tempted to notice more explicitly, than I shall now venture to do, the commendable zeal of our worthy President—and the exemplary efforts of a RUTTER and a RIVINGS—a TOWNSEND and a GARRETT—a HOOPER, a TAYLOR, a M'ILVAIN, a STEELE, a HARTMAN, a STRODE, an EMBREE, and a STROMBERG—with other valuable co-labourers in

the noble cause.* Not satisfied with showing us, by their several examples, what can be done by individual enterprise in behalf of horticulture, they sought to concentrate the energies of its friends in a united effort for its advancement. They established this Institution,—and invited the co-operation of every one who feels an interest in its laudable objects. In this movement, too—as always when benefits are to be conferred upon our race—they have been happily sustained by the countenance and participation of the gentler sex.

With such purposes, and under such auspices, we cannot but anticipate the most satisfactory results. As already remarked, the agency of the Society, in extending information, and awakening a perception of the beautiful, cannot fail to be salutary: for the example of a pure taste has an irresistible influence upon all minds which are not utterly insensible to the beauties of nature and art.

As the classic *Portico* which adorns our village, will be a sure guarantee against the erection of any uncouth pile in its vicinity,—so will the display of true taste, and the exhibition of practical skill, in Horticulture, necessarily influence all who have the slightest aptitude for improvement; and will eventually banish from amongst us every vestige of barbarism, in the decoration of our grounds and the management of our gardens.

The great charm of the scenery, so universally felt by those who visit our mother country, consists in the high state of its agriculture, and the admirable fitness, and symmetry, in the arrangements of the gardens, and of the lawns, trees, and shrubbery, around the dwellings. These are every way worthy of our studious attention—and present the purest models for our instruction, in the art of embellishing rural residences.

WASHINGTON IRVING—whose judgment in the premises will scarcely be questioned—remarks, that “the taste of the English in the cultivation of land, and in what is called landscape gardening, is unrivalled. They have studied nature intently, and discovered an exquisite sense of her beautiful forms and harmonious combinations.—Those charms which in other countries she lavishes in wild

solitudes, are here assembled around the haunts of domestic life. They seem to have caught her coy and furtive graces, and spread them like witchery about their rural abodes.”

Why should not we, also, commence the capture and domestication of those “coy and furtive graces,” which a bountiful nature—or rather, a beneficent Providence—has lavished upon our own country,—and which haunt every glen, and valley, and hill-side, and mountain top, throughout our favoured land?

To aid us in this enterprise, we have the elegant and instructive works of LOUDON, upon the art as practised in the old world,—and of our accomplished countryman, DOWNING, upon the theory and practice of landscape gardening, adapted to North America. By the gentleman last named, we have been supplied with a scientific treatise upon the fruits and fruit trees of our country—as well as with instruction in the best modes of laying out and adorning our grounds: and he is moreover, at this time, publishing a highly interesting monthly Magazine, entitled “*THE HORTICULTURIST, and Journal of Rural Art and Rural Taste*.”* Conducted by such guides—and profiting by the sagacious experience of all nations, if we are docile, attentive, and persevering, we can scarcely fail to accomplish the objects of our Association. We may hope to be efficiently instrumental in arousing the public mind, throughout our ancient bailiwick, to a just sense of the importance and value of a perfect Horticulture. A French king, we are told, acquired some celebrity by uttering the benevolent wish, that he could supply a chicken to the dinner-pot of each of his subjects. That was a mere ebullition of kind feeling, on the part of royalty,—and really added nothing to the meagre dinners of the French people. But the operations and tendencies of *Societies such as ours*, are calculated to effect something more than mere good wishes. An improved Horticulture will not only fill the dinner-pots with all sorts of nutritious esculents—but it will load the tables of all who attend to its teachings, with every variety of delightful fruits. The majesty of

* In any notice of the public spirited few, who led the way in introducing an improved Horticulture among us, it would be inexcusable not to mention the laudable example of the Mises BARNETT, of this Borough—who were among the foremost in cultivating vegetables of a superior quality, and showing how our market may be supplied with the choicest products of the garden.

* To instruct us in the management of the flower and kitchen garden, we have “*The American Gardeners' Calendar*,” by the late BERNARD M'MANON—one of the pioneers, among us, in the good work of teaching Horticulture. Although his book was published forty years ago, it is, in my opinion, about as well adapted to our wants and as replete with good practical common sense—as any thing of the kind which has yet appeared in our country.

France indulged in a vain aspiration: but we look to substantial benefits—and to the certain means of conferring them.

By well directed efforts, we may also be the means of causing those beautiful visions to be yet realized, which were long since entertained, in Chester county, by a few choice spirits within her borders. At an early day—when the perceptive faculties of the masses were unimproved by education, and blunted by the unavoidable drudgery of a rude agriculture,—our county produced men whose taste and refinement were so far in advance of the times, that they actually dreamt of pleasure grounds, and botanic gardens; and consequently, those strange conceits were very imperfectly appreciated, by their contemporaries. A Botanic Garden was then considered as one of the practical vagaries of an eccentric mind—the embodiment of a monomania—instead of being prized as a nursery of taste, and an instrument of knowledge—a means by which the value of new discoveries, and the practicability of their culture, may be speedily and economically tested, for the information of all. Yet, even in the midst of that intellectual fog, there were *minds*—and honoured be their memory!—whose radiance could illustrate the importance of such institutions,—and whose energies could effect their introduction.

If I mistake not, the *second* garden in this confederated empire of republics, the *first* being also in this state, designed for the culture and distribution of rare and valuable plants, was established at Marshallton, in Chester county; and HUMPHREY MARSHALL, its venerable founder, was the author of the first treatise upon our vegetable treasures, that was issued from the American press. His example in founding a Botanic garden, was soon followed by another estimable citizen of the county—the late amiable JOHN JACKSON, of London-grove. A third exemplification of rural taste and elegance, was furnished by the brothers, SAMUEL and JOSHUA PIERCE, of East Marlborough,—who, by their splendid collection of evergreens, and other kindred embellishments, have made their farm one of the most delightful rural residences within this commonwealth.

What those worthy citizens accomplished, from the promptings of their own good taste, when there were few to appreciate, and none to co-operate, may surely be attempted by us, now that the progress of refinement, all around us, not only invites to the performance, but reproves our delay in the undertaking.

Let us resolve, then, to persevere in the good work, until our beautiful science shall

have diffused its blessings over this entire community—and all its mysteries and manipulations shall be as familiarly understood, as are the simplest processes of agriculture. Let the acquisition of skill, and a thoroughly disciplined taste, be our constant aim: for we may rely upon it, that fruitful gardens, and embellished farms, will as surely follow those attainments, as the brilliance of day results from the rising of an unclouded sun.

Let us endeavour to hasten the period, when our county shall be as eminent in Horticulture, as in the other departments of rural economy—and when our village shall be known throughout the land, as a favourite seat of science and refinement,—equally distinguished for the intelligence and urbanity of its people—the number and excellence of its scholastic institutions—the rich productiveness and the tasteful elegance of its gardens.

For the Farmers' Cabinet.

Bucks County Agricultural Exhibition.

MR. EDITOR,—I was present at the Agricultural Exhibition of the Bucks County Society, held at Newtown, and can truly say, I was never more interested on such an occasion. The committee of arrangement must have been practical men, to minister to the desires and expectations of 3000 spectators, leaving not a wish ungratified.

The stock exhibited was excellent and well placed. Here I saw the best bull of COLOSTRA's get, and no mistake; with all the fine points and delectable handling of his sire, united to the remarkably developed loin and rump of his dam, an imported cow, he may be considered as fine an animal as any in the Union, and ought to be better known. He is a perfect white, with beautifully formed horns, the latter indicative of purity of blood.

The horses were not numerous, but of superior character; amongst which, a two-year old colt, by Mr. Harris's horse DILIGENCE, out of one of his imported mares, bids fair to rival his sire, which will be "glory enough."

The hogs and pigs of the pure white Chester county breed, were splendid, and brought large prices at sale: a sow, the property of Levi Buckman, promising to reach 700 lbs. when fat. The sheep of different breeds and grades were very good. There was a good show of produce and vegetables, with corn-stalks measuring 16 feet 8 inches in height, such as scarcely any other county could reach; the *cultivators* themselves being of the *purest blood*—the old Bucks county class of husbandmen, whose praise

has long been known and acknowledged, as the possessors of a county typical of themselves—a rich and healthy surface, resting on a happy subsoil.

There were few implements on the ground, and the committee awarded their diploma to a plough invented by Mr. Wiggins, *before trial!* which error they will have reason to correct, before their next meeting. As the time for the ploughing match approached, it was astonishing to witness the streams of persons wending their way to the field of trial; showing most conclusively, that this part of our exhibitions is still the most attractive. And although but five ploughs started, it was soon perceived that the spirit of excitement and emulation could not have been augmented by treble that number. The men drew lots for precedence, as customary; but why the committee on ploughing have, in their report, reversed the order, placing the Wiggins plough *first* on the list, although the *last* on the field, and the Prouty and Mears *last*, although No. 2 on the list, we are only left to conjecture. Suffice it to say, however, the committee on ploughing report, "for pulverizing the ground and turning under the stubble, the Prouty and Mears plough was better than any other, going seven inches deep;" thus neutralizing the award of the committee on implements to the Wiggins plough before trial. And they might have added, the Prouty plough, after carrying a furrow two and a half inches deeper and two inches wider, finished her task, leaving the Wiggins plough five furrows to turn.

In conclusion, it is but justice to observe, the ploughman of the Prouty and Mears plough, a coloured man by the name of Samuel Congo, although thrust to the bottom of the list, performed the best work that the writer has witnessed the present season, with every furrow lying "like the plaits of a shirt," thoroughly pulverized from bottom to top, and straight as a beeline, with a regular depth of seven inches, without the variation of a tenth; it called forth the admiration of the congregated mass of spectators, without a dissenting voice.

J. P.

Philadelphia, October 26th, 1846.

Management of Poultry.

BY SARAH DAKIN.

Hens.—1st. Provide a warm dry shelter for winter.

2nd. Feed with oats, soaked for 12 hours in warm water before feeding.

3rd. Burn clam shells and pound them

fine, let them have as many as they can eat, and you may have eggs from January to December.

From 30 hens I have gathered this year 3,522 eggs by the 10th of September, and raised 200 chickens.

I manage my chickens by feeding oats and rye ground, two bushels of oats to one of rye. Keep them in a warm shelter at night.

N. B. To prevent the pip or gaps change the male every year, and your chickens will be healthy.

Management of Turkeys.—1st. Feed the same as hens, and let them hatch their young ones any time after the 20th of May.

2nd. Feed the young ones oats and rye ground, wet with milk curd, and occasionally sprinkle a little powdered clam shell lime with the feed; if cold and wet weather, sprinkle a little black pepper with their food.

3rd. Make warm and dry shelters for them to brood in nights, and keep them from the wet and dew until the sun shines warm.

4th. Feed but little the first twenty-four hours after they are hatched; by this management I can raise nine out of ten.

Be sure and change the tom turkey every year.

Raising Goslings.—1st. Have them hatch as early as the first of May if possible, Make dry, warm places for their nests.

2nd. Feed the young goslings with corn meal, put one tea spoonfull of salt in a pint of meal, wet the feed with milk.

3rd. Let them have access to water in pleasant weather.

4th. Keep them at night in a warm, dry shelter.

By this management I can raise 40 out of 50.

Ducks.—Feed ducks the same as goslings. In this way I have raised fifty-two young ones from two old ducks in one year.—*Poughkeepsie Telegraph.*

The Harvest and the Corn Market.

We take the following extract from the *Kelso Chronicle* of the 18th of Ninth month last. It will be read with interest by grain raisers in this country.—Ed.

We think it a most conclusive fact, that neither in dealers hands, nor in those of the growers, have the stocks of old wheat for many years been so small as on the 1st of September, 1846. And this we think constitutes one of the great differences between our prospects at this moment, compared with those at the same period in 1845. On the 1st of September, 1845, the stocks of old wheat were larger than they probably had been in any former year; and on the same

day this year, they were smaller than for many years past. Nor do we overlook the enormous quantity of foreign wheat and flour which has been introduced during the last two months.

The next consideration is the character of the crop of the present year, respecting which, the accounts are more conflicting now that a portion of it is thrashed out, than they were at the time of reaping. In most of the southern counties there can, however, be little doubt that, taking into account quality and quantity, the yield of wheat is as nearly as possible *an average one*—understanding by *that vague term*, that the crop is as good as can be looked for under an average of favourable circumstances; and certainly it is infinitely better in quality, and fully equal in quantity, to the crop of 1845. In the north, however, and especially in Scotland, the difference between the wheat crops of 1845 and 1846, is very much less in favour of the latter year, if, indeed, it be so at all. The wheat crop in the north in 1845, was rather better than in the south; whereas, in the present year, the crop in Scotland has sustained injury by wet, and in some places the crop is not only light, but has been harvested in a very indifferent condition. Still, taking the whole of the United Kingdom, the wheat crop of 1846—taking quality and quantity—we compute to be considerably larger and better than that of 1845. But against this increased quantity, we have to consider that the crop of 1845 was very late, and from the large quantity of old wheat in stock, and the soft quality of the new wheat, was not brought into consumption till late in the autumn. In the present year the harvest was a month earlier, the quality was dry and good, and the barrenness of stocks caused it to be brought immediately into consumption. The lowest estimate that can be made on this account, is, that the crop of 1846 has been begun for general use at least two months earlier than that of 1845 was; which fact, we think, will fully balance any superiority of the yield of this, compared with that of last year.

Then, as to the potatoe crop, whether it be large or small, is a matter of comparative indifference; for, speaking generally, and in reference to the supplies of the winter and spring, the whole crop is destroyed.

America is the only country to which Europe can look for a supply of grain this year, if we except some parts of Poland; and when we consider that France and other continental States will be equal competitors with ourselves for the flour and wheat of the United States, we cannot con-

ceive that it will be wise, even if it be possible, for the Government to maintain through the winter the duty which even the present law imposes. We look forward to a time when state necessity will compel us to abandon all duty upon the importation of food, which, however small it may now be, will be quite sufficient to give a preference to the markets of other countries over our own. Whatever might have been considered the emergency of last year for opening the ports, we are clearly of opinion that it will be found, sooner or later, to be much greater during the coming winter.

TO PRESERVE GRAPES.—Take a well-bound cask, from which the head is to be removed, and place at the bottom a good layer of fine saw-dust or bran. On this place a layer of grapes, then bran and grapes alternately, until the cask is full, taking care that there is sufficient bran between each layer of grapes to prevent their touching each other. Put on the head, which is to be cemented, and the grapes will keep well for a year. When used, in order to restore their freshness, cut the stalk of each bunch, and place it in wine, as flowers are placed in water. — *American Agriculturist*.

POTATOES.—We must again draw the attention of our correspondents to the importance of not coming to hasty conclusions respecting this important matter. It is the worst kind of trifling to pretend that this, that, or the other little experiment has secured a crop, when we are only just at the beginning of the end. We must therefore decline to give insertion to a large number of representations which can have no value, and which their writers would regret to see on record hereafter. To imagine that planting shallow, or planting deep, earthing up or letting it alone, and fifty more such crotchets, can have any effect, is worse than absurd; it is mischievous, for it tends to mislead unreasoning minds. — *Gardeners' Chronicle*.

ARRIVAL OF POULTRY FROM AMERICA.—On Sunday, the America, 500 tons, arrived in St. Katharine Docks, Liverpool, from Boston, with twenty-five cases of turkies, geese, and capons; also six boxes red reindeer of superior quality. They were packed in ice to preserve them. We believe this to be the first importation of the kind. — *Wilmer's Liverpool Times*, April 10.

Green Corn.

Our friend Chandler of the U. S. Gazette has long insisted that there is not, and never was, any place comparable to Philadelphia for all kinds of comfort. A residence here of thirty or forty years, has confirmed him in this opinion; and to show its sincerity, he declares he is willing to take another term of equal length, though we know he was no child when he came. Well may he profess satisfaction with his home lot, if he can be fed with fresh green corn in mid autumn. We take the following from his paper of the 17th ult.—Ed.

Will Mr. Chandler accept a few ears of Sugar corn, grown from seed planted on a lot in North Ward, on the 1st day of August. It was sown at that advanced period of the season with no expectation it would produce corn fit for the table. The result is worthy of note, as showing on a small scale what can be accomplished under a climate like ours, and demonstrates the correctness of the principle laid down by the late lamented Mr. Patch, "that some things can be done as well as others."

The size of the lot is about 86 by 120 feet, covered some five or six inches with coal ashes. During the dry weather it was freely irrigated, although the care thus bestowed was the source of much amusement to my neighbours—as I was assured by them of a "large yield" with the *latest* premium at the Agricultural fair—besides congratulations on the passage of Sir Robert's Corn Bill—advance in price of bread stuffs, &c. Since they have seen me engaged in plucking the ears, their facetiousness is all gone, and with longing looks and bland voice, they remark "that Green Corn *freshly* gathered is a luxury not often found on a city table, and so late in the season, it must be rare even in the country. Enquiries too have been made with apparent solicitude as to the amiableness of my dog's disposition, and whether there are any man traps or spring guns about.—Schuykill Sixth st., Oct. 8th.

The Crops in Great Britain.

THE editor of the "Circular to Bankers," a very careful observer, has just published the result of his recent investigations into the state of the crops. He observes:—

"The spread of the disease has been signally arrested, and a much larger proportion of the crop of potatoes in Great Britain, and also in Ireland, will, we trust, be preserved than any man dared to hope a few weeks ago. This is so far extremely satisfactory, and has afforded us great relief. No doubt this disease will prove a severe and trying

calamity under the most favourable circumstances, but we may now rationally indulge a hope that it will not prove utterly destructive of that important resource for the annual supply of human food, the crop of potatoes. There is no important substance, no material proportion of any thing raised annually in great bulk for the sustenance of civilized man, which is so liable to waste and destruction as the potatoe; and we have no doubt in ordinary seasons one half of the usual crop is, in Great Britain, either used for cattle or wasted, and that not more than one half is converted into food for man. This suggests a very interesting reflection at this juncture, for if only one half of an ordinary crop be applied directly to human food, a much smaller than a usual supply would prove adequate to that purpose, exclusively, provided there be an abundance of other food fit for cattle, to be substituted for the potatoes and preserved roots usually given to them. Then how stands the case as to that point, of a much larger proportion of the potatoe crop being under the exigency applicable to the use of human food, because the abundance of other kinds of the food of animals will cause a much smaller demand for potatoes to feed them?"

With regard to the other crops required for feeding of cattle, he says he feels justified in stating, "that there is a large produce of turnips this season—provided they can be preserved so as to be available.—Then there is the largest supply of grass, clover, lattermath, and hay, collectively, ever known in England." Hence, as food for animals, potatoes will not be used to any considerable extent, if at all required.

With regard to the stock of old wheat, he asserts his conviction, founded on careful observation, "that with the single exception of 1845, the stock of old wheat is larger than it has ever been at harvest time since the autumn of 1837, though it is very much less than it was at the present date of 1845." The points of the case, which investigation has established to the satisfaction of his mind, he states to be:—

"1. That the potatoe disease is not so bad as public feeling and the public press have represented it; that it has been signally checked in its ravages, and has probably, in great measure, spent its force for the season; that the abundance of food for cattle will liberate an unusual portion of a diminished annual supply of potatoes for human food; consequently, that the store of potatoes may, with economy in the use, enforced by a higher price, be sufficient to serve the people for food in reduced rations for three fourths of the time that potatoes annually

serve for in ordinary times and seasons—the writer has this week seen and tasted good potatoes which were dug up in October, 1845.

"2. That the wheat crop of England approaches nearer to an average crop—being such as to prove more deficient in measurement than in its ultimate results in the shape of flour and bread. That, although hot parching weather has in some quarters rendered the grain small and flinty for the want of gradual ripening, especially in the northern counties, it is generally of excellent quality for manufacture through all processes and their products, by giving stronger flour and more bread; it has a smaller proportion of refuse than is usually found in average wheat crops; the weight per bushel exceeds the weight of most good well secured crops; and therefore, it is not to be estimated by measurement alone, which this year is not quite so perfect a criterion as in most seasons."

For the Farmers' Cabinet.

Character of Twenty Fine Varieties of the Strawberry,

BY WILLIAM R. PRINCE OF FLORENCE.

N. B. THE term staminate is used where the flowers have strong stamens either with or without pistils, it not being yet fully determined which of the varieties are simply staminate, and which absolutely perfect.

Large Early Scarlet, the most common in our gardens, but very valuable, vigorous growth, foliage pale green, perfect flowers, fruit medium size, and large on a rich soil, conical, some obtuse and some pointed with slight neck, detaches readily, light scarlet, ripe this season, May 22nd to 30th,—the earliest at market, but may be superseded by the *Primordian*, which is more showy and prolific.

Primordian, a new vigorous variety, pistillate flowers, fruit larger than the preceding, deep crimson, fine flavor, conical pointed, shaped like the *Hudson*, ripens about the same time as the preceding, exceedingly prolific, the fruit in profuse clusters, of fine color and very showy. It is the most productive and valuable of all the early varieties for market, or for small gardens.

Garnestone, vigorous growth, staminate flowers, fruit large, short ovate pointed, of high flavor, second to none but the *Swainstone*, bears tolerably well.

Bishop's Wick is of dwarf habit; flowers pistillate, fruit conical obtusely pointed, dark crimson, good flavor, resembling that of the *Black Roseberry*, and nearly as dark in colour; it is one of the latest varieties.

Primate is a seedling from the *Prince*

Albert, of vigorous growth, with perfect flowers; the berries are large, of a beautiful deep scarlet hue, oval, with an obtuse point, sweet, and of fine flavor; it is a very productive and valuable variety.

Crimson Cone, an exceedingly vigorous variety, with very tall petioles and large foliage; flowers pistillate, fruit in profuse trusses on long peduncles, the berries brilliant, dark scarlet, remarkably beautiful and striking, seeds very deeply imbedded, ripens at the same time as the *Hovey*, *Hudson*, and *Methven* varieties. At market this strawberry commands the very highest price, and as the crops are so abundant, and the fruit so beautiful, it may be deemed one of the most desirable of the whole family.

Elton, the plant large in all its parts, petioles downy, flowers staminate, berries large, oblong conical, light scarlet, splendid, and of high flavor; it is but a moderate bearer.

Black Roseberry, foliage of medium height, flowers pistillate, berries blackish crimson, very firm, of roundish form, pleasant flavor, with sufficient acidity for preserves; don't rot even in wet weather.

Crimson Pine, a new variety, with tall vigorous foliage; flowers staminate, berries large dark red, but not of the deepest colour, conical pointed form, but some obtuse or rounded at the extremity, of fine flavor, rather early; it assimilates in growth and appearance with the *Hudson*.

Black Prince is a very distinct variety, with very tall and vigorous broad dark green foliage; flowers pistillate; fruit in large showy trusses, of a round and very compressed or flattened form, of a blackish crimson hue and good flavor. It appears to be very productive and an estimable as well as a unique variety.

Deftford Pine, a vigorous plant; but requires a position shaded from the noonday sun, or the foliage will perish; flowers staminate; berries of the shape of the *Elton*; large dark red, oblong pointed conical form, very showy and of good flavor.

Boston Pine of vigorous growth, but the leaves not so large as many others. It sustains a hot position remarkably well; flowers staminate, berries of medium size, obtuse conical, with a neck, dark red, sweet, of good flavor.

Myatts' Eliza, a vigorous plant, with long peduncles and large foliage, the flowers staminate, berries irregularly ovate or conical, very variable in size, no neck, dark scarlet, sweet, rich, of high flavor: it unfortunately is a very shy bearer.

Southborough, one of the most vigorous in growth and in the dimensions of its pe-

toles, foliage, and flowers; staminate, berries very large, roundish ovate, deep scarlet, of good flavor. This is one of the very few varieties with large fruit, that support their berries erect on strong peduncles; it is one of the later varieties at maturity.

Princess Alice Maude is a seedling from Keen's Seedling, of vigorous growth, with very broad and remarkably luxuriant dark green foliage, but only of medium height; the flowers are very large, and the most perfect in both organs of any variety I have seen; berries very large, dark crimson, conical obtusely pointed, but often somewhat flattened or angular; sweet, and not high flavored. In maturity it is next after the Primordian, and large Early Scarlet, and continues long in bearing; it is the most valuable recent acquisition from Europe.

Prolific Hautbois, of vigorous growth, flowers perfect with strong stamens on most of the flowers, but some have only rudiments; berries largest of this class, conical, dark dull red, very high musk flavor, excellent; it is a productive variety, and in rich moist soils, it will produce a considerable autumnal crop of fine fruit.

Large Flat Hautbois, of vigorous growth, flowers perfect, stamens but half the usual height; fruit of medium size much compressed, but partially reddened, in profuse clusters, of very high musk flavor and greatly esteemed. As the trusses of fruit are borne above the foliage, they present a beautiful appearance at the period of maturity.

Hovey's Seedling, vigorous growth, dark green very luxuriant, broad foliage, similar to Keen's Seedling, but larger, of only medium height; flowers small, invariably pistillate, one of the latest in expansion, and fewer in number than on most of the other varieties, but when fertilized by a staminate variety, almost every flower produces a berry; the fruit very large ovate, deep red, firm, bears carriage well, not high flavored, but a very showy, productive, and valuable market fruit.

Ross Phœnix is a seedling from Keen's Seedling, and cannot be distinguished from it in growth, flowers, or fruit, but is said to be much more hardy; it is of dwarf habit, foliage broad, dark green and luxuriant; flowers very perfect like its parent; berries of rounded form, sometimes cocks-comb shaped, dark red, sweet, and of excellent flavor.

Succinstone has pale green foliage, and requires a position shaded from the noonday sun, as in hot positions the leaves are apt to burn and die away; the flowers are staminate; berries large, ovate, scarlet, and when full ripe of higher flavor than any I have yet seen; a moderate bearer. It produces no

secondary crop with us, but strong plants will, the second year, if the season is wet, or in a strong moist soil, throw up secondary trusses of flowers and fruit a week later than the first.

Prince Albert is of vigorous growth, with large luxuriant foliage; flowers strongly staminate and in most profuse clusters, thus rendering it an admirable fertilizer; berries of beautiful colour and regular form, dark scarlet, and usually a long pointed cone, but occasionally cocks-comb shaped, not high flavored: it is a productive variety and greatly admired.

AN INCURABLE DISEASE.—A gentleman one day walking along the streets of a crowded city, had his attention attracted to a beggar, who besought his compassion, and whose whole aspect betokened misery and want. The gentleman's heart was touched. He paused, and after giving an alms, inquired, very sympathisingly, what was the cause of the beggar's misfortune, and if he laboured under any complaint. "Yes," replied the party addressed, "I have for years laboured under a disease which I fear will at last carry me to my grave." "Pray, what disease may it be?" said the gentleman. "Ah, sir, it is of so dreadful a nature that I cannot show it to you on the public street, but if you will be so good as to step aside, I will exhibit it, provided you promise not to speak of it to any one." "Agreed," replied the gentleman, and forthwith both adjourned into a private corner. "Now," saith the beggar, opening his clothes, "do you behold the disease which is pressing upon me?" "No, I can see nothing—you are only shamming illness." "Alas, sir," answered the beggar, "you are short sighted; do not you perceive that the disease which afflicts me, and is eating into my vitality, is laziness!—it is a disease which has grown upon me from my birth, and is now altogether beyond the possibility of cure."

The Grape.

At a meeting of the American Institute held in New York last month, Dr. Underhill offered the following:—

Resolved, That the culture of the Native Grape is a subject of primary importance, and that it be recommended to all the agricultural associations in the union to make experiments with the different kinds growing in their vicinity, in order to ascertain their properties, to test their qualities, procure seedlings from them, and by high cultivation to secure such varieties as will lay the foundation for successful culture.

For the Farmer's Cabinet.

Hyacinths in Glasses.

Is the editor of the Cabinet fond of flowers? If he be, or if he be not, will he allow a frequent reader to send an extract from Hovey's Magazine of Horticulture, in relation to the growing of Hyacinths? I love flowers at all seasons, but particularly do I enjoy them when the inclemency of winter makes their bloom depend upon the success of in-door management, and when their contrast with the gloom abroad makes them doubly delightful. In fact, I hardly feel comfortable without my flowers—summer or winter, completely sympathizing in the sentiment that they are "nature's poetry." I would cultivate them for the serenity and quietude they tend to throw over the feelings, and for the ideas which they convey, I acknowledge, to my mind of the perfect benignity of the Divine Being.

While caring for my poetical plantation, I often read myself a little homily, and am surprised at my convictions of carelessness in "dressing and keeping" the garden of my own heart.

The suggestions at the close of the following extract, are quite pretty, and I mean to carry them out.

HANNAH.

"When it is desired to grow hyacinths in glasses with water, good sound large roots should be selected; the glasses should be of some dark colour, such as blue, purple, or green, or else opaque, as the roots shun light, and, therefore, do not thrive well in clear glasses. The glasses should be filled with rain, or river water, up to the neck, or so far as, that the ring at the bottom of the bulb only should touch the water. They should then be put into a dark, warm closet until the bulb has emitted roots, and the shoot from the crown has grown about half an inch in height; it should then be placed in a shady part of the room for four or five days, but not over a mantel piece, or near a fire, or in a strong draught of air; and afterwards be removed to a window with a sunny exposure, giving air by raising the sash for two or three hours during the middle of the day, when the sun shines. On no account should they be placed outside the window, as the cold harsh winds which prevail at this season effectually check their growth. The water should be changed about once in two or three weeks; the glasses should be turned on one side, and the roots partially withdrawn to let the water flow out freely, as, when the roots are wholly withdrawn, it is

difficult to replace them without seriously injuring them.

"The single hyacinths are generally the best for blooming in water.

"A very pretty effect is produced by growing hyacinths in moss. For this purpose, an open-worked French basket may be procured, and a lining of moss placed inside; a glass or other dish is also to be placed in it, and this dish is to be filled up with moss in which the bulbs are to be placed; the moss is then to be well moistened with water, and the bulbs treated as directed for those grown in glasses, only that an excess of water is to be avoided, as if the water covers the bulbs, they will decay. A rather singular effect is also produced by taking rather a large sized turnip, and scooping it out from the root end, until it is about half an inch in thickness, filling up the body of the turnip with mould, and planting a hyacinth in it, and then suspending the turnip by three ribbons or otherwise. The leaves of the turnip will shoot out and turn upwards, completely hiding the roots, and making a very pretty vegetable flower pot."

The Alpaca.

Philadelphia, Sept. 30th, 1846.

MY DEAR SIR,—I beg leave to hand you specimens of wool from the Alpaca, of various natural colours, with specimens of goods manufactured from the same; similar specimens were presented to the British Association at Cambridge, in 1846, and I hope they may be useful to the Agricultural Association of Philadelphia. These were sent to me by William Rathbon, Esq., of Liverpool, a gentleman well known both there and in London, for his liberal and public spirit. To procure them for me cost much trouble. Mr. Danson, who furnished them to Mr. Rathbon, seems a great enthusiast, anxious that all the information known as to the Alpaca and its value, should be made as universal as possible, and with this view he sent me through Mr. Rathbon, two copies of a Treatise on the Alpaca, one to be given to a public Library in Pennsylvania, the other for myself; in compliance with Mr. Danson's request, I beg to present through you a copy for your Association, and at the same time to request your acceptance of the specimens sent to me, hoping that they will be of some public use in your possession.

I remain, dear Sir,

Your most obedient servant,

A. CHILLAR.

ALFRED LANGDON ELWYN, Esq.,

Cor. Sec. of the Ag. Soc. of Pa.

The Golden-fruited Orange Tree.

Citrus aurantium.

THE *Citrus aurantium*, under favourable circumstances, usually attains a height of twenty-five or thirty feet, and is graceful in all its parts. The trunk is upright, and branches into a regular or symmetrical head. The bark of the twigs is of a soft and almost translucent green, while that of the trunk and older branches is of a delicate ash-gray. The leaves are moderately large, beautifully shaped, of a fine healthy green, and shining on the upper sides, while the under sides have a slight appearance of down. The flowers occur in little clusters on the sides of the branches, are pleasing in their form, of a delicate white in the sweet oranges, and in the more acid varieties slightly tinged with pink. In some plants they have a more powerful odor, and are, for the moment, more rich; but in the orange grove there is a fragrance in the aroma which never satiates nor offends; and as the tree is at one and the same time in all stages of its bearing—in flower, in fruit just set, and in golden fruit, inviting the “hand to pull and the palate to taste,”—it is hardly possible to conceive or imagine any object more delightful. There is something, too, peculiar in the organization of the fruit of this tree. Its rind or external covering, is of a spongy texture, containing but little juice or sap of any kind in its substance; but the external surface is covered, or tuberculated with little glands, which secrete an acrid, volatile oil, very inflammable, and of a strong, pungent taste. The interior of the fruit is usually divided into nine to twelve carpels or cells, which contain the pulp, seeds, and juice, and are united by a whitish pellicle or leathery skin, radiating from the centre to the rind, and may easily be separated without wasting the juice. The seeds are solitary or several, and are attached to the inner angle of the carpel, and in some varieties are entirely wanting.

Varieties.—The varieties or races of the orange have been greatly multiplied; but whether from the proneness to change from some original differences in the species, or from difference of soil and climate, it is difficult to determine. It was the opinion of Galeasio, who described forty principal kinds, as cultivated in Italy, that they were all derived from the common orange, although some are more acid, and others more bitter in their flavor.

The orange is believed to have been originally a native of the warmer parts of Asia, and has long since been acclimated to the

shores of the Red and Mediterranean Seas, to the temperate and tropical isles of the oceans and seas, and to the warmer portions of Africa and America. It is especially cultivated with a view to profit, and abounds in Portugal, Spain, France, Italy, Greece, Turkey, Egypt, northern Africa, and many of the islands adjacent to those countries; also in the Azores, Brazil, the island of Cuba, and East Florida.

The first distinct notice of this fruit on record, is by Avicenna, an Arabian physician, who flourished in the Xth century. He not only describes *oleum de citrangula*, (oil of oranges,) and *oleum de citrangulorum seminibus*, (oil of orange seeds,) but speaks of *citric acid*, (acid of citrons.) According to Galeasio, the Arabs, when they entered India, found the orange tribes there, further inland than Alexander had penetrated; and they brought them to Europe by two routes,—the sweet ones through Persia to Syria, and thence to the shores of Italy and the South of France, and the bitter ones, by Arabia, Egypt, and the north of Africa, to Spain and Portugal.

It does not appear that the orange was of Chinese origin, as it is not mentioned by Marco Polo, who is so minute in describing all the other wonders of the “Celestial Empire.” It is said to have been found by the Portuguese upon the east coast of Africa; but it is not known whether it had been indigenous there, or disseminated by the Arabs. When the Portuguese reached India, in the early part of the XVIth century, they found the orange there, and also in China, which was then visited by them for the first time by sea.

At the Azores, nothing can exceed the rich luxuriance of the orange groves, from November to March, when the emerald tints of the unripe, and the golden hue of the mature fruit, mingle their beauties with the thick, dark foliage of the trees. Although the oranges of the Azores are among the best that are to be met with, they are not indigenous productions of those islands; but were introduced there by the Portuguese, as the same fruit was originally sent, by the Spaniards to the West Indies and the continent of America. In the midst of a forest, on the banks of the Cedeno, Baron Humboldt, in 1800, found wild orange trees, laden with large and sweet fruit. These were probably not indigenous, however, but the remains of some old Indian plantations.

The orange plantations of the Azores are usually of large extent, always encircled by walls fifteen or twenty feet in height, and within thick belts of other trees, to protect them from the breezes of the sea. The

trees are commonly propagated by cuttings or layers, arriving, in seven years after planting, to good bearing, and in time spread out with the majestic luxuriance of chestnut trees. Each tree, a few years after, upon an average, annually produces from twelve thousand to sixteen thousand oranges, and one instance is recorded of a single tree producing twenty-six thousand fruits in a year!

The amount of oranges and lemons usually exported from the Azores in a year, is upwards of one hundred and twenty thousand boxes, and seventy or eighty vessels are sometimes seen lying in the roads, waiting to take their cargoes. Besides these, a large quantity of the sweet lemon is cultivated for home consumption, which are produced by grafting the sour lemon on the orange. This fruit is tasteless and vapid, though esteemed salutary and refreshing.

In Algarve in Portugal, and in Andalusia in Spain, there are trees of great size; and extensive orchards of oranges have formed the principal revenue of the monks for several centuries. In Cordova, the seat of Moorish grandeur and luxury, there are orange trees still remaining, which are supposed to have been planted as early as the XIth century; and in the craggy mountains of that province, which are covered with gardens and vineyards, and forests abounding in fruit, the air is perfumed with the flowers of the orange, and carries back the imagination to the days of the Moorish poets and historians, when the land they conquered was adorned with all the refinements of their taste and intelligence, and the luxuries of the east were fully realized.

The orange is said to have been introduced into Portugal by Camoens. In apostrophizing on a little grove that waved upon an open casement, that poet was heard to say, "Yes, I have made a bower for the honey-bee, hung with golden lamps."

In France, the orange country is chiefly Provence, or that part which lies to the eastward of the Rhone; and plantations or groves of oranges are the most abundant and the most beautiful, on the banks of the Var, and especially in the environs of Nice, where the varieties are very numerous, and come to great perfection. According to Risso, there was a tree in that neighbourhood, in 1780, which generally bore upwards of five thousand oranges, and was more than fifty feet in height, with a trunk so large that it required two men to embrace it. Here, the Provence rose, the tuberose, and countless other flowers, blend their sweets with that of the orange; and amidst all the richness of these perfumes, the pes-

tilent airs of the tropics, and even the sirocco of southern Italy and Sicily, are altogether unknown.

In Italy, the orange groves accompany the chain of the Apennines round the whole gulf of Genoa, and until, upon the confines of the plain of Tuscany, they subside in elevation, and bend more toward the Adriatic; although, further to the south, the climate and vegetation of Tuscany cannot be compared to those of the little valleys of Provence and Liguria, especially the latter. About Florence there are still orange trees in the gardens; but there are none of those aromatic groves and plantations which are found further to the west. Mr. Spence, who passed some winters in Florence, states that the cold is so great there, that skating is sometimes practised occasionally four months of the year, and the thermometer repeatedly stands at 24° to 26° F., at 8 A. M. Eastward of Tuscany, though further south, the country is even less adapted to the production of the orange; the sea-coast is barren, the interior is dreary, and over the whole, the "pestilential malaria" creeps, forbidding man to approach, even for the cultivation of the fields. In the gardens at Rome, however, notwithstanding the thermometer ranges from 2° to 4° F., lower, during the winter, than at Nice, the orange tree flourishes, and attains its usual size. At the convent of Santa Sabina, in Rome, there is a tree of this species thirty-one feet high, which is reputed to be upwards of six hundred years of age. After the gulf of Gaeta is passed, and the shelter of the more elevated mountains in the kingdom of Naples is obtained, the orange groves again make their appearance, and particularly abound along the western shore of Calabria, and in the vicinity of Messina and Palermo, in the island of Sicily.

The precise period at which the orange was introduced into Britain, is not with certainty known; but it is supposed that it was brought from Portugal by Sir Walter Raleigh, towards the end of the XVIth century. The trees were planted near a wall in the open air, at Beddington, in Surry, with a movable cover, to protect them from the inclemency of winter. They flowered, and bore fruit, and at the beginning of the XVIIIth century, they had attained the height of eighteen feet, with a diameter of nine inches, and the spread of the branches of the largest one was twelve feet in one direction, and nine feet in the other. In 1738, they were surrounded by a permanent enclosure, like a green-house, and were destroyed by a great frost in the winter following.

Parkinson, in his "Præctise of Planta," published in 1629, gives some curious directions for the preservation of orange trees, from which, one would be led to infer that the trees at Beddington, with their ample protection of a movable covering in winter, had not been in existence at that time. "The orange tree," says he, "hath abiden, with some extraordinary branching and budding of it, when as neither citron nor lemon trees would, by any means, be preserved for any long time. Some keepe them in square boxes, and lift them to and fro by iron hooks on the sides, or cause them to be rolled on trundles or small wheels under them, to place them in an house, or close galerie, for the winter time; others plant them against a bricke wall in the ground, and defend them by a shed of boards, covered with seare-cloth, in the winter; and by the warmth of a stove, or such other thing, give them some comfort in the colder times; but no tent or mean provision will preserve them."

Towards the end of the XVIIth and in the early part of the XVIIIth centuries, the orange tree was a very fashionable article of growth in conservatories, in France, as well as in Britain. The plants were mostly procured from Genoa, with stems generally from four to six feet in height; they were planted in large boxes, and were set out during summer, to decorate the walks near the houses, in the manner still practised at Versailles, the Tuileries, and some other collections in Europe and in America.

The largest trees in Britain are said to be those at Smorgony, in Glamorganshire; they are planted in the floor of an immense conservatory, and produce fruit in abundance. It is said that these plants were procured from a wreck on the coast in that quarter, in the time of Henry VII.

In the south of Devonshire, and particularly at Saltcombe, one of the warmest spots in England, it is said there are gardens containing orange trees which have withstood upwards of one hundred winters in the open air. The fruit is represented as being as large and fine as any from Portugal.

In East Florida, the orange grows spontaneously in the neighbourhood of New Smyrna. In noticing that town, in 1791, Bartram observes, "I was there about ten years ago, when the surveyor ran the lines of the colony, where there was neither habitation nor cleared field. It was then a famous orange grove, the upper or south promontory of a ridge nearly half a mile wide, and stretching north about forty miles. All this was *one entire orange grove*, with live oaks, magnolias, palms, red bays, and others."

He also makes frequent mention of extensive groves of wild oranges in Florida, as far north as latitude twenty-eight degrees. Dr. Baldwin, in 1817, in speaking of Fish's Island, says, "Here are the remains of perhaps the most celebrated *orange grove* in the world. Some trees still remain that are thirty feet in height, and still retain a portion of their golden fruit." In the same year, in describing the beauties of the St. John's, he says, "You may eat *oranges* from morning till night, at every plantation along the shores, while the *wild trees*, bending with their golden fruit over the water, present an enchanting appearance." These trees are not regarded as originally natives of the new world, but were introduced by the Spaniards, at the time they settled Florida, or by a colony of Greeks and Minorcans, who founded New Smyrna, in 1769, while that country was in the possession of the English. Audubon, as late as 1832, observes, "Whatever its original country may be supposed to be, the wild orange is, to all appearances, indigenous in many parts of Florida, not only in the neighbourhood of plantations, but in the wildest portions of that wild country, where there exist groves fully a mile in extent." This wild fruit is known in Florida by the name of the *bittersweet orange*, which does not differ materially from the Seville orange, and probably originated from that variety. The occurrence of these trees, wherever they grow, is a sure indication of good land.

For many years past, no small degree of attention has been paid to the culture of the common edible orange, at St. Augustine, and on the river St. John's. The number of trees owned by different individuals, prior to 1835, varied from ten to fifteen hundred. Perhaps no person in Florida had more than the latter number in full bearing condition at the time of the great frost, which occurred on the 9th of February, of that year. There were many trees then to be found in St. Augustine, which exceeded forty feet in height, with trunks from twenty to twenty-seven inches in diameter, and which, probably, were more than a century old. But there are many persons in that vicinity, at the present time, who are extensively engaged in the business. The late Mr. Kingsley left upwards of six thousand bearing trees, in 1843, all of which are on the St. John's. In addition to these, there are also on the same river more than one hundred orange groves, which, it is estimated, contain twenty thousand trees. At St. Augustine, it is said, there are at least thirty thousand standard trees, four thousand of which are owned by Mr. J. Douglass; about the same

number by Mr. V. Sanchez; and by Mr. J. Driedale, and the lady of the late Dr. Anderson, fifteen hundred each. Notwithstanding the injuries which the trees have suffered by the depredations of insects, for a few years, as well as by the discouragement caused by frost, it may be observed that there are more standard trees planted in Florida at the present time, than there ever were at any former period. Previous to 1835, St. Augustine produced annually from two millions to two millions five hundred thousand oranges, which were equal in bulk to about fifteen thousand barrels. They were shipped to Charleston, Baltimore, New York, Boston, &c., and usually brought from one dollar to three dollars per hundred, or about three dollars per barrel, producing in the aggregate, a little short of fifty thousand dollars per annum. During the orange season, the port of St. Augustine formerly presented quite a commercial aspect, there being frequently from fifteen to twenty vessels in it at a time, loading with fruit. A person who was the owner of one hundred standard trees, could safely rely on a yearly income arising therefrom, of two thousand dollars, sometimes three thousand, and even four thousand dollars! In 1829, Mr. A. Alvarez gathered from a single tree, six thousand five hundred oranges: and it is said that there was a tree on the St. John's, which bore ten thousand fruits in one year! But ordinarily each tree produces about two thousand fruits.

The orange has also been an object of culture for a long time in Carolina and Georgia; and in 1762, it will be seen by the London "Annual Register" for that year, that there were four barrels of this fruit shipped from Charleston to England.—*Browne's Trees of America.*

For the Farmers' Cabinet.

Curing Hay.

On the 87th page of the last number of the Cabinet is a statement of expedition in collecting and storing hay, and an opinion given in respect to the condition of that hay, which, should it be the means of inducing the general adoption of such a practice, would be productive of great loss.

The relative value of labour and hay, and the risk of sustaining damage from rain, and incurring additional expense, has led to the general practice of hurrying it in, in such a condition that much of its value leaves it in the mow. In a practice of more than thirty years, I have seen but two instances in which such was not the case—they were

under circumstances of unusually continued drought.

The quantity of salt said to be used, though much too small to produce the effect ascribed to it, was too great for the benefit of the cattle.

The statement that it contained, when put in the mow, "all the nutritious qualities required to form flesh, bone, muscle, and to promote the growth of the animal to be fed on it," is admitted: but that it will remain so, the laws governing organized matter, will not allow me to admit; and had the operator taken quantities of the grass cut on second day—put one parcel in the centre of his mow, and exposed the other in a proper manner to the influence of sun and air, even till seventh day, and weighed the two next winter, he would have found that the grass put by to be dried by the heat produced by the decomposition of its own substance, had lost the most in weight:—had he then fed the two parcels under circumstances that would have enabled him to test their relative value for supporting the strength and maintaining or increasing the weight or produce of the animal, he would have found that it had lost even much more in value than it had in weight.

Why this must be the result I will endeavour to explain. All substances capable of sustaining animal life, are combinations of three or four simple elements united, not in the manner or order of their natural or inorganic affinities, but as they have been induced to unite by the vital force, and can only be maintained by preserving them from the influence of disturbing causes. Such a cause are moisture and heat—where they are present new arrangements less complex will be formed, and unless moisture or temperature fail, the organic arrangement will be utterly destroyed, and the most nutritious compound will be converted into water, carbonic acid, and ammonia.

So far as the support of respiration and the maintenance of animal heat are concerned, the value of any substance adapted to animal subsistence, is represented by its capacity to unite with oxygen: in a mow of hay, the capacity to unite with oxygen is reduced in proportion to the amount of heat generated, including that which is sensible and that which is rendered insensible, by uniting with the water to convert it to vapor. Nor is this the worst effect produced. As nitrogen is weak in all its affinities, the substances containing nitrogen—and such only are capable of forming flesh or repairing the waste occasioned by exertion—are more easily disturbed than those that do not. Decomposition commences on them—they

are therefore more reduced in quantity than those that support respiration and maintain animal heat.

As the heat given out by the union of oxygen with organic substances when reduced to their natural affinities, is a fixed quantity, whether that result be effected by fermentation or combustion, we shall not be far astray when we adopt it as a conclusion governing our proceedings, that it will be requisite to feed with hay that has been heated in the mow, as much grain, as being burned, would have produced the same amount of heat, to produce the same result that the hay alone would have done, had it been made so dry that it would not have heated.

There are probably few agriculturists who have not noticed the difference in the result from feeding hay and the grass of which the hay was made; yet there are many who would contend that hay is not injured, but rather benefited, by a considerable degree of heat in the mow. To me it would appear as rational to contend that water, carbonic acid, and ammonia passing into the air, can sustain an animal as well as caseine, fibrine, albumen, gum, sugar, starch, passing into the stomach.

E. G. PASSMORE.

For the Farmers' Cabinet.

Curing Hams.

TO THE EDITOR,—As the season for slaughtering our cattle and hogs, and putting them in the cellar for family use, is at hand, the mode of curing beef, pork and hams, is important to every housekeeper. I take it for granted every one knows that in curing pork, the main point is to put in a great abundance of good salt. There need be no fear of applying too much. If not required in curing the meat, it will remain in the cask, and is as good as ever to be applied again. In curing beef, salt should be used more sparingly. Six lbs. of fine salt, four ounces of saltpetre, one and a quarter lbs. of brown sugar, make a good proportion of ingredients for 100 lbs. of beef. In twenty-four hours a pickle that will bear an egg-end-wise, should be applied. Drying beef should remain in the pickle about ten days. To cure hams thoroughly, so as to have them sufficiently salt to keep, and yet not too salt, and to give them the real *Jersey* flavor, is a more delicate operation, and requires a nice hand. The following recipe is a good one, and may be relied on for making a first rate ham. To 80 lbs. of hams, take

four ounces of brown sugar, three ounces of saltpetre, and one pint of fine salt; pulverize and mix them thoroughly; rub the hams well all over, particularly on the flesh side, and lay them on boards for 36 or 48 hours, then pack them in casks, adding two quarts of fine salt to every 80 lbs. of hams. In fifteen or eighteen days, they may be hung up to smoke.

H. M.

Gloucester co., N. J.

Agricultural Society in Prince George's County, Md.

To the Editor of the Farmers' Cabinet.—

By invitation from some of the distinguished agriculturists of Prince George's county, Md., who attended the Cattle Show held at the Rising-Sun Village, near this city, on the 30th of September and 1st of October last, I was induced to make a visit to them for the purpose of attending the exhibition to be given by their Agricultural Society at Upper Marlborough.

Myself and the gentlemen who accompanied me were kindly and hospitably received and entertained, by Col. Capron of Laurel Factory, by whom we were most pleasantly conveyed to Marlborough, a distance of 27 miles, partaking of the kindness and hospitality of his relatives and friends, at their delightful mansions on the road. The country through which we passed is gently undulating, affording many fine views. The soil is naturally a rich sandy loam, with an abundance of the finest marl, and which I was informed, but few of the planters have availed themselves of for the purpose of improving the land.

In many places the fields appear to produce good crops of corn, wheat, and tobacco, notwithstanding the severe rotation of cropping without manure. What would they produce under different management—the application of manures, sowing more grass seed, keeping more stock, and ploughing less land? It would be difficult to find a district of country that could be rendered more productive and beautiful.

On entering the enclosure where the exhibition was held, the first thing that attracted my attention was a tent erected by C. B. Calvert, Esq., sufficiently capacious to accommodate 40 head of his splendid herd of improved Durham cattle, each one having its stall. At the end of the tent was a house placed on wheels, having been brought for the accommodation of his people who had charge of his numerous stock, &c.,—the whole had been brought from his large es-

tate near Bladensburg, a distance of twenty miles.

Near by the above was a splendid lot of improved Durhams, 14 in number, owned by Col. Capron, which, with a lot of superior Southdown sheep, two pair of working oxen, two teams of eight mules each, of astonishing size and quality, handsomely harnessed, were exhibited by that spirited gentleman; in addition to which he made a fine display of the most valuable and beautiful horses.

Several lots of fine Devon cattle were exhibited by Mr. W. D. Clagitt, Mr. Clement Hill, Mr. Thomas Duckett, and Mr. Skinner. Col. W. W. W. Bowie showed some large and superior Leicester sheep—some fine animals of that breed were exhibited by Mr. James Mulliken, Mr. Graham, and others. Some good swine were shown of Berkshire and other breeds.

The display of agricultural implements was highly creditable. The vegetables exhibited from the garden of Mr. Duckett, were of the finest quality—besides these, there were other fine samples. Some fine samples of fruit were exhibited by Dr. Bains, who delivered a very interesting address on the second day.

The collection of domestic articles exhibited by the ladies at the court-house, was numerous and highly attractive, and their presence added greatly to the enjoyment of the occasion. At three o'clock, P. M., the members of the Society with a number of invited guests repaired to the Hotel, where an excellent dinner was provided; at which, the President, Robert Bowie, Esq., presided—during the time of dinner the company were engaged in agreeable conversation, and the discussion of agricultural subjects—after the removal of the cloth many toasts were offered and drunk with great applause. Excellent speeches were made by Col. W. W. W. Bowie, Hon. Mr. Jenifer, late Minister to Vienna, Mr. Duckett, Mr. Charles Hill, Mr. Calvert, and others. After which the President made some very pertinent and excellent remarks, showing the rapid progress made by the Society in a few years, mainly by the exertions of a few public spirited individuals in the county.

On the second day the different committees made report, and the premiums were awarded and paid, during which time much good feeling prevailed. The unsuccessful candidates seemed in no way discouraged, but on the contrary evinced a manly determination to try it again the next year.

In conclusion, Mr. Editor, I must be allowed to say, that a more high minded, intelligent, and truly hospitable people, cannot

be found than the planters of Prince George's county.

A. C.

Philadelphia, Nov. 7th, 1846.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, ELEVENTH MONTH, 1846.

THE Exhibition at the *Franklin Institute* closed on the 31st ult., after being open nearly two weeks. The arrangements appeared to us unexceptionable, and afforded every facility for observation and inspection, that could be desired. The newspapers of the day, gave detailed accounts of many of the articles, and the names of their depositors. We cannot attempt to do either. It was particularly gratifying, and indeed, surprising, to observe in ranging through the halls, the varied powers of machinery, and the results of its application. We, whose heads are grey, and recollect the world around us, as it was forty years ago, and then recur to our present manufactures—our rail roads—steam engines and Magnetic Telegraph, that "nerve of thought," and ourselves, involuntarily inquiring, what shall we be a century hence? As Americans looking over the vast extent of our territory—the salubrity of our climate, and the character of our institutions, the heart thrills with indefinable anticipations, and we are ready to conclude, that even more than our dreams shall be realized.

The delicate and precise performances of the machine for making Cards, as well as of that for covering Buttons, attracted much attention, while naturally enough, nothing more amused the young people, than the lively manner in which the galvanic battery jerked them about.

The variety of Stoves of all sizes, and all patterns, were highly interesting both to young beginners in the arts of housewifery, as well as to many more matronly, who, the stove dealers very well know, are not averse to change. Whoever can be so fortunate as to procure anthracite or wood, might certainly have a choice to suit them.

Dripp's patent Water wheel of cast iron, appears to be an improvement, worth inquiring into, by those who use water power. They are now putting one in operation at the mill at West-town boarding school, in Chester county. It is made at Coatesville, and costs from \$160 to \$300.

Jennison's Diaphragm Filter for purifying water and other liquids while under pressure, is really a very complete affair. It may be readily fixed to the hydrant in the bath room, and thus add purity of water to its other luxuries. The price is \$3 to \$5.

Birkinkie's and Benson's Water Rams were successfully illustrating their powers, and showed conclusively, as we think, that all reliance may be placed in them.

The Washing machines, of course, took the attention of our notable and inquiring housekeepers.

A LETTER from Salem, Iowa, dated the 23rd ult., says that "wheat is worth between 40 and 50 cents a bushel on the Mississippi—corn and oats 18 to 20 cts.—beans 50 cents, and buckwheat flour \$1 50 to \$3 per cwt." The increasing demand for bread stuffs in Great Britain and on the continent, may probably increase those prices. By the Britannia, arrived at Boston on the 7th instant, the report of short crops in Europe is confirmed, and the probability is strengthened that this country will be looked to for a supply of the deficiency.

THE total amount of coal shipped from the various coal regions in this State during the present season, up to the first week in this month, has been as follows, viz:

From	tons cwt.
The Schuylkill Coal Mines,	1,088,231 00
Lehigh,	478,714 12
Lackawanna,	275,452 16
Wilkesbarre,	149,522 06
Pine Grove,	64,729 12
Grand total,	2,032,690 06

The retail price is \$5 50 for Lehigh, and \$4 75 for Schuylkill.

WE called a few days ago to see Fitzgerald's newly invented Threshing Machine, which has been highly spoken of, and of which, without however being so fortunate as to see it in operation, we formed a favourable opinion. The beaters are plain, instead of spikes, and it occupies but little room. It may readily be attached to the endless chain horse power now in use, or may be driven by steam, wind, or water. We were told the grain and straw come out unbroken, and that great velocity may be given to the cylinder, with an easy moderate pace of the horse.

AT a recent meeting of the New York Farmers' Club, a paper was read from the minutes of the Horticultural Society of Paris, giving "an account of a successful experiment of grafting a stem of the tomato upon the stalk of the potatoe, by which a crop of tomatoes was raised in the air, while one of potatoes grew in the earth."

TWO bucks and six ewes of the Leicester breed—very superior sheep, and in remarkably fine condition, arrived here last month from Liverpool in the ship Franconia, Capt. Smith. They went on by rail way to their destination at Ashland, where we could hope they long may live to benefit the Kentucky flock, and do credit to Henry Clay, their enterprising owner. Their cost in England, we understood was about \$100 each, and their freight about £2 10s. sterling each.

THE Annual meeting and Exhibition of the Bucks County Agricultural Society, took place at Newtown on the 15th ult., and was largely attended. The day was pleasant, and the Newtown Journal says it was estimated that 3000 people were on the ground. "The display of stock," says that paper, "was unusually fine, as well as that of produce and agricultural implements." The ploughing match took place in the afternoon. Diplomas were awarded to the owners of

numerous fine horses, cattle, hogs and poultry, as well as for a good display of agricultural implements and products. Five ploughs were entered and contended for the honour of superior workmanship; but the committee were unable to give any one the preference.

Edward M. Paxson delivered a very sensible address, in which he takes occasion to express his surprise that, considering the great proportion of our people who are engaged in agricultural pursuits, so few farmers are sent to the legislature. He thinks it hardly reasonable to raise the complaint so frequently heard, that taxes are oppressively heaped upon them, when they so quietly throw the powers of legislation into the hands of others who may forget their particular interests.

A FRIEND extensively acquainted in the state of Ohio, says the wheat harvest there was unusually fine, and that much more ground has been seeded this autumn than ever was before. The *Hamilton Advertiser* estimates the crop in the Canadas at 12,000,000 bushels. We are also advised that the yield of wheat and corn in Iowa was excellent. We think there is every prospect, that with the increased demand in Great Britain, we will be able to supply it to a great extent at fair prices. Such is the fertility of our soils, and the general character of our seasons, that if Europe will give us one year's notice, we may undertake to supply bread stuffs to any amount.

PASSING the door, a fortnight ago, of our townsman John Hagey, confectioner, in Market street, we observed three large boxes with Isabella grapes, packed in nice clean leaves. He was selling them at twelve and a half cents per pound. They came from Reading, some sixty miles in the interior, and were in good order. Will our farmers avail themselves of the hint?

IF A young man with a family, acquainted with the farming business, would be willing to take charge of a farm as overseer, or manager, and thus promote assiduously the interests of the owner. Address the Editor.

WORMAN'S *Southern Agricultural Almanac* for 1847, edited by Thomas Affleck, of Adams county, Mississippi, has been received. There is much in it highly valuable to the Southern farmer and planter.

THE *Farmers' Library* for the present month, is valuable as ever. The plates are fine. Our friends Greeley & McElrath, with their Editor, really deserve to succeed in their enterprise, they throw so much liberal expenditure into it, as well as industry and good judgment. When we looked at the cut on page 213, we made up our mind pretty conclusively, that *agriculture must be in its nature a progressive art*. The price of the work is \$5 a year.

In a letter from a subscriber at Johnstown, Cambria county, dated 30th ult, he says, "The potatoe disease is general in our mountains; most farmers have not gathered more than they planted. They are selling here from 37½ to 50 cents, and cannot be had for that in any quantity."

THE NORTH AMERICAN stated a couple of weeks ago, that New Jersey had this year produced some of the finest apples ever seen in the United States.—New Jersey is famous for her good fruit, as well as her veal.

M. F. MAURY, of the U. S. Navy, in a letter dated at the National Observatory, Washington, on the 26th ult., and directed to the Secretary of the Navy, says he has observed and verified the newly discovered planet *Le Verrier*. He gives its right ascension and southern declination for the three preceding days. The probable distance of this new planet is believed to be not less than three thousand millions of miles from the sun, and its period of revolution is upwards of two hundred years.

"The discovery of this planet," says Lieutenant M., "may be considered the greatest achievement of theoretical astronomy. Astronomers had long since observed that Uranus suffered perturbations in its orbit, for which they could not account by any known cause of disturbance. They conjectured, indeed, that it might be owing to the attraction of a planet out upon the confines of the system, perhaps, but which was considered beyond their reach.

"A Frenchman takes up the subject in his closet, and there, with the perfection of mathematical skill, creates his hypothetical planet, gives it a mass, assigns an orbit, and a period of revolution; and then sets it in motion at a distance inconceivably remote.

"He tries his problem, varies his conditions and tries again. At last the position, mass, orbit, motion and places are such that its attraction satisfies the anomalies of Uranus. Astronomers are astonished at his depth of research, and amazed with his results. He tells those at Berlin where to turn their glasses; they point them according to his directions, and the new planet *Le Verrier* is there."

THE Massachusetts Horticultural Society has been famous for its great display of fruit. At the Annual Exhibition in Boston in the Ninth month last, some of the contributors produced more than one hundred varieties of both pears and apples. We are aware that a man's orchard or garden is not necessarily valuable in proportion to the number of kinds of fruit which he cultivates; but the inference we draw in the matter before us, is, that where so much attention is bestowed on the subject, great success and general benefit must result.

DR. DARLINGTON, one of the first botanists of the country, having furnished us with a copy of his Address before the Chester County Horticultural Society at West Chester, on the 11th of Ninth month last, it is with much pleasure we embrace the opportunity to transfer it to the columns of the Cabinet. We believe there is not a sufficiently general appreciation of the conveniences of the vegetable garden as an appendage to the farm, to say nothing about the meliorating and refined influences of the nicer branches of Horticulture—the Corinthian order of human attainments and pursuits. Let us remember we live in a world where there is abundant room for improvement, and one of whose great watch-words should be—*PROGRESS*.

FOR SALE, A BEAUTIFUL FARM,

Nearly adjoining the city of Annapolis, Maryland, containing 350 acres of land, naturally of good quality, and during the last four years, I have had it highly improved with clover, plaster, ashes, lime, and other manures to the amount of upwards of fifteen hundred dollars. The fences and buildings are all in good repair, and divided into ten departments, including one peach orchard, containing upwards of 1500 trees, in fine health of three summers' growth, and an apple orchard in full bearing. About 150 acres of this land are covered with the best sort of building timber.

I have a good wharf, where a large schooner can lie and receive or deliver produce. This farm is very pleasantly situated, high and dry, and about rolling enough to cast off extra rain water,—also has good spring water in several of the fields. The buildings consist of a good dwelling, nearly new, two brick servant houses, one house for the manager, two large tobacco houses, 30 by 70 feet each, one is used for a barn; stabling, corn, milk, and hen houses. From the above dwelling I can go to the Annapolis market in about fifteen minutes, where we have a tolerably good market for hay, peaches, sweet potatoes, milk and butter. Of milk about \$2000 worth may be sold annually. Freight is cheap to Baltimore, which is an excellent market, with which we have daily intercourse, both by steam and otherwise. But few farms have the same opportunities of doing business to profit, being now in good order to make money, and only on account of advanced age, infirmities, and residing at a distance, am I induced to part with it. It will be sold cheap. Persons desirous of seeing the place, will please call on me, near Baltimore, Md., and I will go and show it.

ROBERT SINCLAIR, Nurseryman.

August 28th.—41.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FRUIT AND ORNAMENTAL TREES, EVER- GREENS, SHRUBBERY, &c.,

In great variety, for sale as heretofore, by the subscriber, at his Nursery, near Haddington, four miles west of Philadelphia. Orders sent by mail, or left at the office of the Farmers' Cabinet—where catalogues may be obtained—will be attended to, and the trees well packed when ordered to distant places. City gardeners supplied with trees suitable for the streets, at a liberal discount.

SAMUEL RHODES.

Tenth mo. 15th, 1846.

TREES FOR SALE.

The Subscriber has for sale at the Mount Laurel Nursery,—established by J. Needles—an extensive assortment of Apple, Pear, Peach, Plum, and Cherry Trees and Grape Vines. Also, a great variety of

ORNAMENTAL AND EVERGREEN TREES,

Which are of the best quality, and good size for transplanting. Orders left with Josiah Tatum, No. 50, N. Fourth street, will be punctually attended to, where catalogues may be procured.

EZRA STOKES.

Mount Laurel, near Moorestown, N. J.,
Eighth month 15th, 1846.

SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Eye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoes Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guarantee in pursuance to suit purchasers.

M. S. POWELL.
tr.

Philad., Feb., 1846.

FOR SALE,**AT D. O. PROUTY'S****AGRICULTURAL WAREHOUSE,**

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1.50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

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September 15th—tr.

The quantity of rain which fell in the 10th month, 1846, was nearly two inches and a half. 2.44 in.
Penn. Hospital, 11th mo. 2nd.

COATES' SEED STORE,

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FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

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Sept. 15th, 1846.

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THOMAS FURBER.

May 15th, 1846.

1 yr.

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March 14th, 1846.—1y.

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JOSIAH TATUM.

Philadelphia, Twelfth month 15th, 1846.

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October 15th, 1845.

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JOSIAH TATUM.

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THE FARMERS' CABINET,

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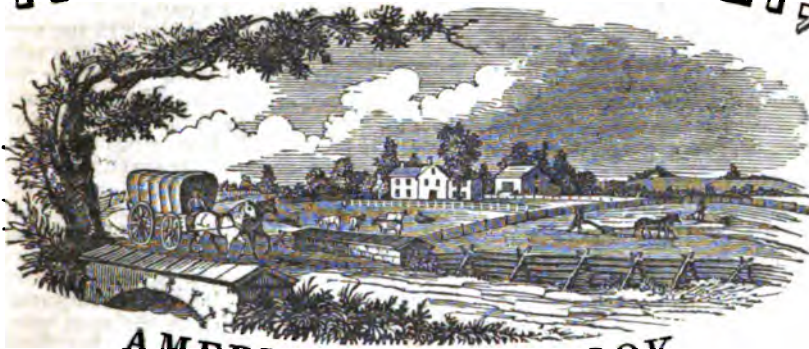
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AMERICAN HERD-BOOK.

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Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. XL—No. 5.]

12th mo. (December) 15th, 1846.

[Whole No. 143.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

Soiling, or Horse-feeding.

We have from time to time drawn liberally from the various No's. of Colman's Tour. In the Cabinet for Tenth month last, we gave an extract on the above subject, and now offer to our readers, or such of them as do not take the work, still further remarks and statements in relation to it. From some cause or another, soiling has not succeeded, or been adopted permanently, to much extent in this vicinity: and no doubt there are sufficient reasons why it has not been. We are entirely of the mind that it should not be lost sight of, or be looked upon as entirely abandoned. Every farmer must judge for himself, and form his conclusions or adopt a practice accordingly. The editor does not doubt but there may be situations and circumstances that would with judicious management, render the plan highly advantageous.

There is an expression in the following extract that we must ask leave to repeat here. "*The moving spring of every farmer's success is his manure heap.*"—Ed.

I HAVE seen several instances of soiling in this country; but with the exception of large milk establishments in the towns, and

CAB.—VOL. XL.—No. 5.

one or two large farms in the country, they have been upon rather a restricted scale. I have said that horses are almost universally soiled; the same may be said of much of the fat stock, which is in preparation for an early market, and especially for the agricultural shows. Fattening sheep in England, are generally folded, and in most cases the feed is cut or pulled for them, and they are fed from mangers or troughs. Other stock is generally grazed, as with us. Indeed, in parts of the country, especially in Scotland and Ireland, there is a large portion of the country which does not admit of, or would not pay the expense of cultivation, and this is devoted to grazing, as the only beneficial use to which it can be applied.

I am bound to say that soiling is not universally approved. Mr. Stephens, the eminent author of the Book of the Farm, says that he has tried twice the experiment of soiling his horses, but failed in both cases; at one time for want of cutting grass, the second cutting having entirely failed that year; and the other time, for want of straw for litter, until the arrival of the new crop. The latter reason seems to me about as appropriate and valid an objection against soiling, as it would be to have said that his experiment of soiling failed because he had no stalls in which to tie his cattle, and no troughs from which to feed them. Litter is indispensable in order to reap from soiling all the advantages which it may afford in the production of manure; but it is difficult

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to understand with what propriety it can be objected to the practice of soiling, that it fails, when that failure is not in any way the fault of the system, but grows out of the deficiency or neglect of him who makes the experiment. The former objection has a good deal of force; and it would be great imprudence or improvidence to undertake a system of soiling without an ample preparation against such contingencies.

It does not come within my province, in this case, to detail what has been done in the United States in the way of soiling. The experiments of Josiah Quincy, Esq., on his estate in Quincy, Mass., made with great intelligence and acuteness, are detailed most fully in the Reports of the Massachusetts Agricultural Society. I have in other publications referred to a dairy of Robert Smith, Esq., near Baltimore, where a hundred milch cows were soiled. Another similar establishment I have visited on Long Island, N. Y., where an equal or larger number of cows are soiled. I have likewise, in former reports, mentioned the admirable experiment of a small farmer in Waltham, Mass., who, from three cows carefully soiled, and allowed to recreate themselves for two hours a day in the barnyard, produced at the rate of thirty pounds of butter per week, for three months. But I will refer to some cases which have come under my observation here, always finding occasion to regret the extreme difficulty of obtaining from farmers in general very exact accounts of any of their farming operations.

I shall give first the experience of Mr. Skilling, the intelligent and skilful manager of the school farm at Glasnevin, near Dublin.

At first he was a country schoolmaster, having the management of four and a half acres of land. "When I adopted the house-feeding system," he says, "my neighbours laughed at me, and predicted that my cattle would die; others said the cattle would give no milk. I lived near a village, through which I led my cows twice a day to water. They had a good appearance, as they were well fed; and they ran through the village wild and full of spirit. This showed they were in no danger of *dying*; and when they saw—for I was closely watched—firkin after firkin of butter going to market, they began to think there could be no great deficiency in the milk. I fed them on mangel-wurzel and turnips; and when other cows were dry, mine were giving milk. During three years I kept three cows, and sold £6 worth of butter each year from each cow, besides having a sufficiency for a family of six persons."

When I visited Mr. Skilling's well man-

aged establishment, he was then soiling sixteen cows in clean, well ventilated, and convenient stables. He states that these cows, upon an average, give him £15 10s. a year, each, and this principally from the sale of the milk. He estimates "that a cow fed in the house will make twenty-five tons of manure, which will be sufficient for an acre of ground." I am afraid in this case my friend overrates the quantity. He says he can, "on an average, keep a cow on every two English acres of land." I believe that, with proper pains and cultivation, a cow may be kept upon less than two acres. I have known a cow very well kept upon one acre through the year, and a portion of hay annually sold from the same ground. "Such," he adds, "are the advantages of house-feeding. There may be difficulties in keeping cattle in houses; but people should have patience, and not let difficulties overcome them. The advantages that arise from house-feeding are a larger quantity of manure and much more milk; and such being the case, it would appear strange that men should continue to practise the old plan. The system is applicable to a large farm, as well as to a small one. In England the farmers do not keep half a sufficient stock upon their farms. They keep a great number of sheep, but not sufficient to compensate for the short stock of cattle. But it may be objected that, on a very large farm, say 1000 acres, it is difficult to erect a cow-house sufficiently large to accommodate as many cattle as would be necessary. The difficulty can be easily obviated. Let a number of cottages be erected on the farm; and beside them let cow-houses be built, so that the persons residing in the cottages can take care of the cattle in the houses next to their own. Let the young cattle be in one house; the milch cattle in another; the fat cattle in another; and it will be found, at once, that the system is as applicable to a large farm as to a small one." Mr. Skilling, it will be seen from these statements, is of a sanguine temperament; but the observations of a man so experienced as he, are entitled certainly to a respectful hearing.

He goes on to say, "The house itself must be airy, well ventilated, and perfectly clean. The animals must be well curried and brushed every day." His stables and their occupants gave ample evidence that he practised what he preached. "There ought to be one particular person to superintend and pay attention to the feeding; and one of the most important parts of his duty is, to ascertain the appetite of every beast. Cows, like other animals, will eat less or more; and they ought to be supplied according as

they require it, being kept rather with an appetite, than otherwise. As soon as the animal has eaten its food, all refuse should be immediately taken away, and nothing suffered to remain in the stalls before it. The cattle will know the hour of feeding as correctly as the clock tells it, and will be disappointed and fretted if neglected. This neglect is prejudicial both to milking and fattening. Every farmer who cultivates his land in a proper manner, will have plenty of food for his cows in the house, summer and winter, and of various kinds. Cows, like other animals, are capricious in their appetites; they will not agree with being constantly confined to the same kind of food. No matter how nutritious in itself, there ought to be a variety; a change, if possible, for every feed." This is the mode of feeding which, he says, he himself has found eligible. "I give six feeds in the day, summer and winter, beginning at 6 o'clock in the morning, and ending at 9 in the evening, viz., at 6, at 8, at 12, at 3, at 6, at 9. They get water in their stalls at 10 in the morning, and at 5 in the afternoon; they are likewise turned out one hour, from 10 to 11, where they exercise, and drink if they choose. The kinds of food I use chiefly are the following: In summer, at 6, I feed with perennial or Italian rye grass and clover; at 8, with cabbages or leaves; at 12, with cut hay and straw; [this feed is to prevent the action of too much green feed upon them; a cow in health ought never to be purging; if she is, both milk and flesh are running off;] at 3, upon vetches; at 6, upon mangel-wurzel leaves, rape, cleanings of ditches, or other refuse of the farm or garden; at 9, clover or grass, or this may again be dried feed, if the state of the bowels requires it. In winter, at 6, first feed with steamed food; at 8, with turnips, raw; at 12, with cut hay and straw; at 3, with mangel-wurzel raw; at 6, with steamed food; at 9, with hay and straw. Water must be given or offered, and plenty of salt used in the steamed food. This mode, after much experience, I have found highly advantageous for all my cattle." He adds, "I have ascertained that when my present farm was in pasture, it pastured eighteen cows in summer; but now it feeds sixteen cows and three horses, all the year round, and I have as large a proportion of grain crops on the same land as most other people, besides."

I have thought that these details, all of which came under my own observation, would be interesting to my readers; and I will refer to some experiments on a small scale, on the estate of Lord Gosford, in the county of Armagh, Ireland, already spoken

of, under the management of William Blacker, Esq., who may be considered as the author of house-feeding in Ireland.

I had the gratification of a most instructive visit with this gentleman, among several of his small tenants, who everywhere greeted him with a warmth of welcome which showed their deep sense of his kindness. Indeed, many of them, through his judicious and beneficent agency, had been recovered from a condition of want, discouragement, suffering, and debt, and placed in circumstances of independence, comfort, contentment, and improvement; and I know not who are more to be envied than those persons who have it in their power to confer such benefactions, and who are permitted to see the beneficent fruit of their labours.

I shall be excused if I interrupt the course of my subject to speak of the means by which these changes, which here meet the eye and warm the heart, and form such an affecting contrast to the indescribably wretched condition of many of the cottiers of Ireland, have been brought about.

The numerous tenantry among whom he was placed, and a large proportion of whom were the occupiers of very small holdings, laboured under two great difficulties,—ignorance of the best mode, and the want of the means, of cultivating their grounds,—difficulties which press heavily upon a great portion of the Irish population. The best of all charities is that which helps the unfortunate to help themselves. To understand the condition of Ireland,—unlike, it is said, that which exists in any other part of the civilized world,—it is necessary to go into Ireland. My eye never before rested upon, my imagination could scarcely exaggerate, the state of destitution and degradation, as far as their condition was concerned, in which I saw millions of these people living. The whole blame of this condition is not to be charged, as is too often done, upon the landlords. If, as is well known, there are too many landlords who neglect, there are those who seek to perform, their duty, and to discharge their high responsibilities, and who, actuated by an ardent spirit of philanthropy, are sincerely anxious to ameliorate the condition of their dependents, and to raise them from their low estate. But what can be done with people who are satisfied to burrow in a mud cabin, or a mere hole in the earth, and to marry, and live, and to bring children into the world, upon poverty and potatoes? Mr. Blacker, with the coöperation of the nobleman whose estate he manages, has effected the most beneficial changes among his tenants, by stimulating their pride, by multiplying their wants, by

calling out their self-respect, by teaching them the best modes of management, and assisting them to pursue these modes.

His first plan was to employ some respectable and skilful farmers from Scotland, well qualified to teach, who were to serve as agricultural instructors. They were themselves to occupy a small farm, on which they were to exhibit an example of the best mode of management and cultivation; and within a prescribed district, they were to visit the cottiers and small tenants, and instruct them in these improvements, looking after them frequently, reporting them, and encouraging them by the promise of handsome premiums for superior skill and industry, to be bestowed at the annual agricultural meeting, at the close of the year. In addition to this, through his Scotch agents, or by himself, Mr. Blacker offered the tenants aid in the form of seeds, artificial manures, improved implements, and sometimes a cow, the expense of which was all to be ultimately reimbursed. The plan has succeeded admirably. One of the first visits was to a small farmer, who had been at one time negligent, addicted to intemperance, deeply in debt, and wholly discouraged, and without even a cow, so important a blessing in a poor man's family. His habits were now changed; he had applied himself most diligently to the cultivation and improvement of his little farm; he had paid his debts; he was keeping two or three cows, and now felt the pride and wore the port of a man. It would be difficult to say what superior benefaction he could have bestowed upon such a man; and the beneficence was gratefully appreciated; for there is a chord in the human heart from which the touch of disinterested kindness seldom fails to bring a response.

I will give the returns of some of these small tenants.

A. B. has fourteen acres. He keeps four cows and a horse. The sales from the produce of his cows amounted in the year to £17 beyond the supplies of his family. Under the system of house-feeding, he says he can keep four cows where he could keep only one before. Such a place as this, it is clear, should not be burdened with a horse. Each acre of his land, he stated, gave him a profit of £5.

C. D. cultivated eight and a half acres, in potatoes, flax, oats, turnips, &c., &c. He kept two cows, but had wisely sold his horse. He paid £9 15s. rent, and had cleared, in the previous year, £43, exclusive of butter used in his family. His oats were a magnificent crop; and where they had been manured with the water in which his flax had

been rotted, the beneficial effects of the application were most striking. He raised two pigs.

E. F. occupies nine acres. Had last year three cows; this year he is keeping four; sold last year about £40 of produce, exclusive of butter. His cows produce about seven pounds of butter each per week.

All this is spade husbandry and house-feeding. I shall proceed to give some other statements, which did not come under my particular observation, but with which Mr. Blacker was kind enough to make me acquainted.

G. H. stated that he had fed his stock of four cows and two calves upon one acre and two roods of land* all summer, being about one rood and four perches for each cow, after allowing for the calves, and had three roods of turnips, and one of rape, for winter. His whole occupation amounted to eight acres and three roods of land. His stock, of four cows and two calves, he stated, late in the autumn, had been fed, through the summer and up to that time, upon clover and vetches, on the same piece of ground which formerly, in grazing, kept only one cow, and that poorly. This man added, that he was satisfied that there was no way in which land could be made to produce so much, or by which it could be brought into such heart, as by the soiling system, and four-course rotation of crops. He was just beginning to feel the benefit of it, his land being now all perfectly clean, every inside ditch levelled, not a spot in the whole that was not productive, and not any of it whatever in pasture.

I. J. states that when he came to his farm, four years ago, he could only keep one cow, and two acres of such pasture as it afforded was only sufficient to summer-feed her; that he had gradually increased his stock from year to year, until he had now three good cows and a horse, on his eight acres of land, and had now more acres manured than he then found roods.

K. L. states that where formerly he had only two cows, a heifer, and a pony, he now had five cows, two heifers, and one good horse, upon his sixteen acres, kept on clover and vetches in summer, on cabbage in the autumn, and turnips in the winter and spring.

M. N. occupied twenty-three acres of land. His stock was seven cows, two heifers, one calf, and two horses, which were kept in good condition; and besides this, he

* I suppose, in these cases, the Irish acre is intended, which, to the English statute acre, is as the square of 14 to the square of 11, or as 196 to 121.

had nine hundred stooks of excellent oats, and an acre of flax.

O. P. occupied six acres of land. Two acres and two roods were in potatoes, one acre in turnips, and he produced about thirty barrels of oats. He house-fed three cows, three calves, and an ass; he made three firkins of butter; he had two pigs; he had to support a family of eleven persons; and yet he had twenty barrels of potatoes to sell.

Q. R. held four acres, one rood, and twenty perches of land. He had two acres of potatoes in arable land, and three roods in reclaimed bog, of which he had reclaimed two acres; he had one acre of turnips; he had ten barrels of oats to sell; he had made three firkins of butter during the summer; he had house-fed two cows and two heifers. He had thirteen in a family to support, and he expected to sell ten barrels of potatoes; had already sold three pigs at a profit, after paying their cost, of £5.

S. T. held five acres of land. He had two acres of potatoes, three roods of turnips, twenty perches of flax. He had house-fed three cows and a genet. He had made three firkins of butter, and had twenty-four barrels of oats and fifteen barrels of potatoes to sell.

I do not deem it necessary to multiply these examples, although more are within my reach. I need not point out the conclusions to which they lead. Two things, however, deserve particular attention. The first is, that none of the product of the land is lost or wasted. The second, which reveals the whole secret of success, is in the large quantity of manure which is obtained upon this system. It is confidently stated that, where everything is well managed and saved, a single cow will furnish ample manure, in the course of the year, to be applied to an acre of ground. I do not recollect that, in any of the cases which I visited, any provision was made for saving the liquid manure in a tank, so as to be applied by sprinkling to the land. This, if properly done, as may be seen from Mr. Dickenson's example, would have greatly increased the resources of these small farmers.

How far the system is applicable in other cases, every farmer must determine from the circumstances in which he is placed. I have no hesitation in saying that there is no farmer who keeps live stock, to whom the subject is not worthy of attention. Perhaps there is no farmer with whom it may not very advantageously be to a degree applicable. The moving spring of every farmer's success is his manure heap; and how the manure heap is to be created and enlarged every one knows.

The great matter to be considered is, how to obtain a supply of succulent food throughout the whole year. With us in the United States, the plant of Indian corn, for a part of the season, cut green, and as early as it will bear cutting, furnishes the richest and most abundant of all provision. It may be sown broadcast or in drills, and so as to furnish a succession of feed until the frost comes. This advantage cannot be had here.

The Italian rye grass is an admirable plant for this purpose. In addition to this, there is a species of rye, called *St. John's day rye*, lately introduced here, which grows luxuriantly, and comes into a state fit to be repeatedly cut very early. I saw this plant cultivated on Mr. Pusey's estate, and there brought into most advantageous contrast with the common rye, which was sown in the same field.

For house-feeding, likewise, lucerne is sometimes cultivated, although not so extensively in England as I had expected to have found it. This requires to be sown on rich soil; broadcast, if the land is clean; but in narrow drills, so as to admit of being hoed, if it is likely to be infested with weeds, which, in truth, constitute a principal obstacle to its cultivation. It is believed there is no more nutritious food to be found for cattle and horses, and none from which so large a product can be obtained from an acre, save only Indian corn, in a favourable climate and soil. It is stated confidently, but perhaps extravagantly, that an acre of good lucerne will keep four or five horses from May to October, when cut just as the flower opens. It requires a dry, rich, loamy soil. The climate of Scotland is said to be too cold for it; but I have known very good crops of it produced in the neighbourhood of Boston, New England. Clover—the common red clover—furnishes an excellent article for soiling, scarcely inferior to any thing which can be found; but its cultivation is too familiar for me to enlarge upon it.

The article mainly depended on in England for soiling, especially for horses, is vetches or tares. These furnish a very large amount of feed, and there is at least one kind which may be cut more than once in a season. Of the vetches which are cultivated for the purpose of soiling in England there are two kinds; one, which will bear to be sown in the autumn; the other, which is sown in the spring, to afford late summer or autumn feed. As well as I could learn, there is no observable difference in them, but that one will endure the winter, and consequently will afford early spring feed, and the other kind will not endure the winter; and the general impression is, that

these peculiarities are the result of cultivation and habit, rather than of original constitution, if the term may be so applied.

After the early and trying part of the season is past, the crops of turnips, swedes, mangel-wurzel, and various tribes of cabbage, under industrious and good cultivation, will furnish an abundant supply of food; in respect to some of them, first in their leaves, and next in their bulbs and roots. Rape is likewise cultivated very extensively, especially in Lincolnshire, for the folding and feeding of sheep. As far as my observation extended, it is not usually cut for sheep; but a temporary fence is put up round a portion of the field, and they are turned in upon it. This being eaten, another enclosure is made; and in this way they successively enter upon the different portions of the field.

That a variety of food is conducive to the health of the animals, and to the increase of the milk of the cows, seems well established by general opinion and by actual experiment. Dried food is much less conducive to milk and to fatness than green; and the effect of dry straw is to produce almost immediately a great diminution of milk. Hay is conducive to health, and to milk, in proportion to the succulent state in which it has been cured, provided, however, it has attained some substantial growth before being cut.—*Colman's Tour, No. 7.*

A simple Method of Protecting from Lightning, Buildings with Metallic Roofs.

By PROF. HENRY, from Proceedings of American Phil. Soc., June 20th, 1845.

ON the principle of electrical induction, houses thus covered are evidently more liable to be struck than those furnished either with shingle or tile. Fortunately, however, they admit of very simple means of perfect protection. It is evident, from well established principles of electrical action, that if the outside of a house were encased entirely in a coating of metal, the most violent discharge which might fall upon it from the clouds, would pass silently to the earth without damaging the house or endangering the inmates. It is also evident, that if the house be merely covered with a roof of metal, without projecting chimneys, and this roof were put in metallic connection with the ground, the building would be perfectly protected. To make a protection, therefore, of this kind, the professor advises that the metallic roof be placed in connection with the ground by means of the tin or copper gutters which

serve to lead the water from the roof to the earth. For this purpose, it is sufficient to solder to the lower end of the gutter a rib-band of sheet copper two or three inches wide, surrounding it with charcoal, and continuing it out from the house until it terminates in moist ground. The upper ends of these gutters are generally soldered to the roof; but if they are not in metallic connection, the two should be joined by a slip of sheet copper. The only part of the house unprotected by this arrangement will be the chimneys; and in order to secure these, it will only be necessary to erect a short rod against the chimney, soldered at its lower end to the metal of the roof, and extending fifteen or twenty inches above the top of the flue.

Considerable discussion in late years has taken place in reference to the transmission of electricity along a conductor; whether it passes through the whole capacity of the rod or is principally confined to the surface. From a series of experiments presented to the American Philosophical Society, by Prof. Henry, on this subject, it appears that the electrical discharge passes, or tends to pass, principally at the surface; and as an ordinary sized house is commonly furnished with two to four perpendicular gutters—generally two in front and two in the rear—the surface of these will be sufficient to conduct, silently the most violent discharge which may fall from the clouds.—*Silliman's Journal.*

A WORD TO BOYS.—The "Learned Blacksmith" says, Boys, did you ever think that this great world, with all its wealth and woe, with all its mines and mountains, oceans, seas, and rivers, with all its shipping, its steamboats, railroads, and magnetic telegraphs; with all its millions of darkly groping men, and all the science and progress of ages, will soon be given over to the hands of the boys of the present age? boys like you, assembled in school rooms, or playing without them, on both sides of the Atlantic? Believe it, and look abroad upon your inheritance and get ready to enter upon its possession. The Kings, Presidents, Governors, Statesmen, Philosophers, Ministers, Teachers, Men, of the future, are all Boys, whose feet, like yours, cannot reach the floor, when seated on the benches upon which they are learning to master the monosyllables of their respective languages.

OLD Jethro Tull said, that if a man was too lazy to do anything else on his field, at least he ought to take a stick and keep stirring the soil!

For the Farmers' Cabinet.

Observations on the Potatoe Disease.

MR. EDROZ.—Having observed the progress of the potatoe disease somewhat more closely this season than heretofore, I have seen much to interest and instruct the student in vegetable physiology. I think it proper to give you some of the results of my observations.

I have noticed that peculiar varieties of the potatoe have suffered less from the disease, and resisted its attacks longer than some other varieties. The *mealy* kinds of potatoes, by whatever name they may be called—and they have various names in various sections of the country—have suffered much less under the same circumstances, than those of a *waxy* nature. This fact has been noticed by several others every year since the disease has been so severe, and has had the effect to make many believe that the disease was caused by a deterioration in the potatoe. I will endeavour to show that this fact goes to prove the truth of my theory. You are aware that I attribute the disease to an abundance of carbonic acid, and recommend the alkalies as the proper remedy for it.

The cause of some potatoes being *mealy* and others *waxy*, is evidently that the *mealy* varieties possess more power to assimilate their food, carbonic acid, &c., and convert it into starch, than the *waxy* varieties possess. Starch, you are aware, is composed of carbon and hydrogen. Now the carbonic acid which destroys the *waxy* variety, is apparently assimilated by the *mealy* variety, and made starch of. But this carbonic acid may, and does sometimes come so abundantly, that even the best *mealy* varieties cannot assimilate all of it, and the surplus, if sufficiently great, will destroy them too; while under more favourable circumstances, when the disease is not very bad, the *mealy* variety, by using this extra quantity of carbonic acid, which would destroy the *waxy* variety, escapes the disease, and a larger crop of potatoes may be raised.

You have in your readings seen the views of those who hold that the cause of the potatoe disease is a loss of vital power in certain varieties of the potatoe. If it be considered that the *waxy* potatoe has lost a part of its vitality, which is retained by the *mealy* variety, then there is some reason, in my opinion, for their views. And, indeed, there is nothing improbable in the matter, for the *mealy* variety does exercise a power that the *waxy* does not, whether because it has it not to exercise, or something prevents it, is a matter for future consideration. But

that the *mealy* variety has more vitality, I do not doubt, but nevertheless am inclined to think that by a proper system of cultivation, the *waxy* variety may be placed in possession of that principle. A close observation, however, in those seasons when the disease is great, will show to those who hold the idea that this deficiency of vitality causes the potatoe disease, that even the best varieties will suffer from the disease, however great their vitality may be. Thus proving that, although the bad varieties of the potatoe may be more exposed to the disease, that this is no evidence that this badness is the cause of the disease.

Those plants which have been raised from the seed of the potatoe apple, may have more vitality than those which have been raised for years from the tuber; and in favourable seasons, when the disease is not very severe, may escape, when those of less vitality may suffer; but in seasons of great disease, all suffer alike in the end, although those of strong vitality may put off the evil day longer than the others. Therefore it would be best to know and meet the real cause of the evil, and thus ensure a heavy crop, no matter how bad the season is, or what variety of potatoe may be planted.

It cannot be doubted that if a bad variety of potatoe be planted and cultivated properly, with every favourable circumstance attending it, that its quality may be improved; and that on the other hand the best varieties may be planted, and if improperly cultivated, with every unfavourable circumstance to contend with, that its quality may be depreciated. Hence, whatever may be the season, or however bad the variety of the potatoe, if we know the cause of the disease, and cultivate the potatoe in the very best manner, we may be assured that the result will be more beneficial to us than if we pursued an opposite course.

I had intended to give you the result of other observations in this letter, but perhaps this is sufficient for the present. **CHEMICO.**

Wilkesbarre, Oct. 30th, 1846.

The Alpaca.

Introduction of the Alpaca into Europe.—

The greatest number of llamas that were ever carried to Europe at one time, was a herd that arrived at Cadiz, in 1808. It originally consisted of thirty-six individuals, including the sorts called llamas, alpacas, and vicuñas. They were brought from Lima, in Peru, and Concepcion, in Chili, to Buenos Ayres, by slow journeys of two or three leagues. They were fed on the road with potatoes, maize, and hay; but when

their supply of potatoes was exhausted they became so constipated, that it was necessary to afford them medical relief. Eleven only of the number arrived at Cadiz, of which two died there. These animals were carried to Europe as a present from Godoy (Prince of Peace,) to the Empress Josephine; but they arrived just at the period of his disgrace, at the commencement of the Spanish Revolution; and the populace, in hatred of their late minister, were about to throw the llamas into the sea. The governor of Cadiz, however, rescued them; and they were given in charge to an eminent Spaniard, Don Francisco de Theran, who had a fine zoological garden at San Lucar de Barrameda, in Andalusia. The French armies having subsequently traversed this province, Marshal Soult took the llamas under his care; and Monsieur Bory de Saint Vincent, a distinguished French naturalist, who accompanied the army, studied their habits with great attention, and made some drawings of them, which were afterwards lost at the battle of Vittoria. He paid particular attention to the quality of their wool, and transmitted some specimens of each sort to the Academy of Sciences, at Paris. It appears from the report of M. de Saint Vincent and Don Francisco de Theran, that the fleece of the *alpa-vigonia*—the cross between the vicuña and the alpaca—is much longer and six times heavier, than that of any other variety.

The first account of this interesting race of quadrupeds as having been introduced into Britain, was that of the beautiful white and brown female alpaca exhibited by Mr. Cross, in the Surrey Zoological Gardens, from 1810 to 1816, and is noticed and figured in page 217 of the present volume. In a letter to Mr. Walton, dated May 2nd, 1843, Mr. Cross gives the result of his experience in regard to this animal, in the following words:

"As you are desirous of having the result of my observations relative to the alpacas which have fallen under my notice, I beg to say that the first one brought to this country, came into my possession after being for two years in that of Mr. De Tastet, of Halshead, in Essex, who exchanged it with ———— Tharpe, Esq., of Chippenham Park, near Newmarket, for a pair of magnificent coach horses. The latter gentleman kept it for about two years, in the hope that one might arrive from Peru of a different sex, as he was anxious to breed from them in consequence of the fineness of their wool. Disappointed in his object, I bought it of him for one hundred guineas, and exhibited it about six years; consequently it must have

been eleven or twelve years old when it died.

"It was fonder of browsing than grazing. One remarkable fact I cannot help mentioning, and that is, that it never drank anything during the whole time I had it, though repeatedly offered drink. I fed it upon bran, oats, carrots, and hay; occasionally in the season with a little green tares. Its wool was about eighteen inches long, mixed with some trifling portions of hair. It was remarkably tame, and I may say affectionate. I have since had several others of various colours, some quite black, and others piebald, &c. Having had them so often, I let them take their chance in the stalls, giving them the opportunity of running into a paddock, and they always did well. The last pair I had were perfectly black, and I sold them to Mr. Advenant, who immediately took them over to the King of Bavaria. The late King of Wirtemberg, and other continental monarchs, also had some of me. I think they might be introduced into some parts of this country with great advantage, particularly in the hilly parts of Scotland and Ireland, where they could have an opportunity of browsing as well as grazing. Occasionally they will breed with the llama; and a more elegant animal than the offspring cannot be imagined, but whether the latter will breed again, I cannot say."

About the time Mr. Cross was exhibiting his interesting specimen, the late Duchess of York had four or five llama and alpaca pets at Oatlands, where she took great delight in watching their sportive antics on the lawn, or contemplating their intelligent and expressive countenances, greatly resembling that of the gazelle. They ran the chance of all exotics, whether animal or vegetable; left to the care of servants who, when the master and the mistress are away, usually treat them as mere matters of course, and often with a strong feeling of prejudice. When the Duchess died, these pets necessarily were dispersed; and in all probability, at that early period breeding with them was deemed an impracticability. They, however, lived long enough at Oatlands to render it apparent that they are of a hardy race, although the old and plain-spoken park-keeper has more than once been heard to say, that while under his charge, they were not in their proper element, the grass being too *firm*—meaning too rich and good.—*American Agriculturist.*

Irrigation.

In the second No. of the current volume, page 66, we gave an extract from J. J. Thomas' prize essay on this subject. Below, will be found another part of that

valuable paper. We have long believed, and have endeavoured to inculcate the opinion, that farmers in this vicinity—perhaps we might include the whole country—do not sufficiently appreciate the value of irrigation, and consequently do not avail themselves as they might, of the power they have in many situations, to throw the running streams over their grounds. It is by frequently calling attention to subjects of this character, that we may hope gradually to accomplish some good.—Ed.

A SUPPLY of water to plants, is essential on two accounts. First, it is necessary that all plants in a growing state have at hand a supply of the water which enters so largely into their composition. Secondly, that there be enough to dissolve freely all substances which ascend through the stem from the roots; for without solution, no fertilizing substances can enter the plant.

The large quantities of water needed during vegetable growth, are evident from the abundance which exists in nearly all living plants. Some plants contain more than three-quarters of their weight, and most others more than one-half. In addition to this, the enormous quantities thrown off in hot dry weather by perspiration, amounting sometimes to the entire weight of the plant in a day or two, or to several tons daily from an acre, render an abundant supply still more important. Hence the reason they droop and wither so soon, when the usual supply is withheld. Water also, of itself, forms an essential portion of the food of plants, by furnishing nearly all the hydrogen they consume.

But a most important office performed by water, is its solvent power. During its fall in rain, in washing and purifying the atmosphere as it descends, it brings down matter which had previously risen in the form of vapor; and afterwards as it flows along the surface or through the soil, it dissolves many solid substances, and becomes charged with various matters of organic origin, which possess more or less highly fertilizing powers, and which are thus conveyed in a fluid form to the roots of plants. Water thus becomes one of the best and most efficient modes of manuring; the quantity of foreign matter thus held in solution, and the enriching power it possesses, are often almost incredibly large, even though it may appear but little discoloured by their presence. There are, of course, various degrees of foreign and fertilizing matters to be found in water, according to circumstances; from the purest brook or river water, to the heavily loaded drainings of the city sewer, or the farmer's manure tank.

In England, and in all countries so cool and moist that plants do not suffer greatly

from drought, the chief benefit resulting from irrigation, arises from the foreign matter contained in the water. Hence it becomes a very important object to obtain such streams as contain the most enriching substances. Some interesting illustrations of this fact have been given to the public. In one case, a gentleman who owned meadows on the bank of the stream which passes through Winchester, observed the great superiority of the waters of the stream below the city, after they had received the drainage of the sewers. The benefits which the plants derived from the water, was strikingly shown by its deteriorated quality after it had passed over the fields and imparted its fertility to the plants. On one occasion, after having long enjoyed the exclusive use of a stream, his neighbour, higher up, imitated his example; and the water, in consequence, was so reduced in value, that he thought of disputing the right with him.

An interesting experiment was made in Scotland, to show this abstraction of dissolved substances by the plants. A stream of water before its use in irrigation, was analyzed, and was found to contain per gallon about ten grains of common salt, and four grains of the salts of lime. After passing over fifty yards of meadow, it was again analyzed, and yielded only five grains of common salt to the gallon, and two grains of the salts of lime.

A long continued flow of the water will thus impart to the plants a large and most important quantity of mineral as well as organic manures. It is not necessary that streams should always appear to the eye turbid or impure, in order to be well adapted to this kind of manuring; indeed, a turbid stream, rendered so by the suspension of clay merely, may be less valuable than a limpid stream, which holds gypsum and various other salts in solution. Several analyses have shown that all *hard* waters contain considerable portions of gypsum or sulphate of lime; and that not unfrequently every two thousand parts of the water of our rivers and brooks, contain one part of gypsum. If, therefore, every square yard of common meadow soil absorbs only eight gallons of water, more than a hundred weight and a half of gypsum per acre, is thus diffused through the soil.

It would be hardly possible to convince the community of the enormous amount of wealth lost to the country yearly, by a neglect to secure the liquid manure with which it abounds. The quantities which are every year swept from our fields and farm-yards, and carried through our lands, unapplied, in running streams, into our riv-

ers and lakes, and into the sea, might safely be estimated at millions. The sewers of towns and villages, alone, carry off a vast amount of manure. A meadow near Edinburgh, belonging to the Earl of Moray, which was watered for several years by drainage from the city, yielded so heavy a crop of grass that it was cut six times a year, and the whole yearly crop was sold at one hundred and twenty to a hundred and fifty dollars per acre.

But even throwing the manuring process, strictly speaking, out of the question, who can estimate the beneficial results of judicious irrigation, if generally applied through the country, wherever running water is accessible? During hot and dry summers, our parched and withered grass fields, and our diminished and stunted *ruta baga* and potatoe crops, might, in many situations, be at once stimulated into freshness and vigor, and doubtless be doubled in product. The artificial improvement of supplying manure to the soil, is universally practised and commended, and considered the first and last requisite in successful culture; while the artificial application of water, which, unlike manure, costs nothing, nor requires the labour or expense of cartage, but is often equally, if not more important, seems to be nearly unknown. Why should the Yankees be behind other portions of the world in this particular? We do not lack proofs, sufficient to every observing mind, even in the rough and wild manner in which it is performed by the inundation of the flats of creeks and rivers, nor has such proof been wanting, from the overflowing of the Nile in ancient days, down to the present age of the world; but the artificial process possesses this eminent advantage—that while the former is uncontrollable and uncontrolled, the latter may be applied or withheld at pleasure, as the crop suffers from drought, or becomes injured by too heavy a flooding.

Irrigation, like every other farm operation of importance, needs to be conducted with care and skill. A want of judgment or proper intelligence, may in some cases lead to failure, or greatly lessen advantages.

Practice has fully shown that too long a continued and heavy flooding of upland plants, is actually prejudicial to their growth. The plants should enjoy the full benefits of both air and water. There is no better way of accomplishing this object than to keep the water constantly passing over the surface in a tolerably brisk current. It must not be so rapid as to wash away the soil, nor so slow as to stagnate, or to drown the plants. It is only while water is in motion that plants are enabled to draw from it to advantage, by

successive fresh supplies, the nutritive substances it contains in solution. A farmer accustomed to the appearance of plants when in the most rapid and healthful state of vegetation, will detect at a glance any injury which an overdose of water may occasion, when the supply should be withdrawn. Excessive irrigation may also prove injurious where it produces a water-soaked subsoil, the remedy for which should be draining. Indeed, so different in nature is a water-soaked and an irrigated soil, that while the former injures, the latter benefits; the former state resulting from a want of draining, and the latter always proving most eminently beneficial on well drained land, where stagnant water can never accumulate.

Equal success has not always attended irrigation, in consequence of the different quantities of enriching matter contained in different streams. The most valuable, usually, are those which have passed through a thickly populated country, and have received and become saturated with different kinds of waste manures. Hence the drainage of sewers, and the washings of roads, are particularly valuable. Sometimes, however, there are fertilizing substances derived from the soil or the minerals it contains, which may not in the least disorder the water, and yet be of very important benefit. These can only be known by their effects in practice, or by analysis. But these considerations more particularly demand attention in cool and moist climates, as in Britain, where the simple application of water is unimportant. Hence there autumn and winter irrigation is much practised, the water being then charged with animal and vegetable matters which have accumulated during the summer. In the United States, where a supply of water during drought and heat is so much more essential, this difference in the richness of water is not so sensibly observed.

In using small streams on considerable acclivities, temporary means of diverting the water from the main channel may be resorted to, and there cannot possibly be a failure. But in larger streams, the work should always be well formed at once. A good permanent dam must be made, and substantial *hatches*, or solid framework furnished with a sliding gate, inserted. In using small streams, many diverging channels may be cut; in large ones this cannot be done, from the cost of many large dams; a single dam may therefore be used, from which a main side channel should pass, to be subdivided according to the circumstances of the case.

Irrigation will always need an exercise of the judgment, to be done in the best manner; no two pieces of land being exactly alike, and the irregularities of the surface varying in many ways, the plan of the work, or the distribution of the channels must vary. Each, therefore, requires a different design, adapted to the circumstances of the case. But no one should be deterred from an attempt, nor lose the eminent advantages of irrigating his grounds, because he cannot attain perfection at once.

It is sometimes objected to watering grass and other lands, that the crop, though greatly increased in quantity, is lessened in quality. This is indeed true to a small degree, but not more so than results from an increased growth by stable manure. The slight inferiority in quality is immeasurably overbalanced by the increase in bulk. No objector would desire his hay crop to be lessened one half in quantity by a parching drought, in order that the hay might be better.

Irrigation is usually applied to grass land, but there appears to be no reason why it may not be greatly advantageous if used for different cultivated crops during our hot summers. S. Williams, of Waterloo, N. Y., states that during a severe drought, he admitted water in small gutters between the hills and rows of vegetables in his garden.

"In ten days early potatoes grew two-thirds in size." In fact he never obtained good potatoes before. Other vegetables were greatly benefitted. The great increase by watering, in the growth of spinach, lettuce and strawberries, by the English and Flemish gardeners, is well known. In a warmer climate, the advantages would be increased. "The melon," says Lindley, "acquires its highest excellence in countries where its roots are always immersed in water, as in the floating islands of Cashmere, the irrigated fields of Persia, and the springy river beds of India." But the same experiments were not attended with such success in London, where the leaves perspire less, and the climate is cooler. During the past summer, raspberry plants, watered by the drippings from the eaves of a workhouse, grew triple the size of others deprived of this advantage.

But as all plants are rendered more succulent by watering, the supply of water should be withheld to all that bear fruit, as the period of maturity approaches, or diminished flavor will be the consequence.

The Starch Manufacture.

Our readers probably are not aware of the extent of this manufacture in the coun-

try. Some of the principal establishments for this purpose have been erected during the past few years in the State of Maine, and are doing an immense business.

The Commissioner of Patents in his late report, remarks that in August, 1835—quoting from a public journal—not less than *twenty starch factories* are now being erected in *one county*, viz., that of Franklin; and further says: "About one hundred rods from the centre of Merseer village, are two starch factories. They are doing a good business for the proprietors, and also for the farmers in the vicinity, who find a ready market for their potatoes, which as a general thing, is as profitable a crop as is cultivated."

"The starch made is of first-rate quality. It is principally taken to Massachusetts, where it is readily marketed, and consumed mostly in the calico and cotton factories."

"We are informed that one of these factories manufactured into starch the past season, rising 18,000 bushels of potatoes."

"Starch factories are springing up all over the country. Three are under process of erection in Stark's, at different points. There are now being completed, and being erected in Somerset county alone, ten starch factories."

"Here are thirty-five of these factories, in only four counties of Maine; giving to the farmers in their vicinity a market for their potatoes to the amount of about six hundred thousand bushels." Yearly at fair prices, combining the manufacturing and agricultural interests of those counties in a very remarkable degree. The efforts of the proprietors are being crowned with merited success.—*Farmer and Mechanic.*

Cultivation of Fruit Trees.

To the Editor of the American Farmer:

WHEN a few years since, I first turned my attention to the cultivation of Roses, cuttings of rare and valuable varieties would sometimes be given me, having only a very few buds, such as are generally considered good, and terminating in one or more small spurs or limbs of half inch to one or two inches in length, either with roses on them or that had just bloomed, the buds on which spurs are usually too small for working. It occurred to me that I could lose nothing by cutting out and inserting these spurs exactly as I would ordinary buds, and I was pleased to find that frequently these succeeded when the other buds failed. I then tried longer shoots, something near a foot long, and with equal success. Again it sometimes happened that when I wished to insert other buds, they had already started, and as I

could not always afford to throw away most of the few buds I could get, I determined to try these too in the same way, and was pleased to find that these frequently grew off without wilting their leaves at all, and succeeding sometimes when the dormant buds either failed or pouted.

Having commenced cultivating fruit trees about the same time, and being naturally anxious to taste some of the pears that had celebrity, I thought that by inserting the fruit spurs in the same manner into quince stocks, I might have very dwarfish trees that would produce fruit very soon, and I think that I have not been disappointed in either expectation, as I have several trees that have borne fruit or blossomed, that are much smaller than any that were sent me as dwarfs, and have borne fruit several years sooner, as many of the parent trees have just begun also to bear, though my experiments were not commenced until several years after they were received. As I kept no memoranda of these things, I cannot be more particular. The term budding, cannot, with propriety, be applied to this operation, but it conveys a correct idea of the operation, I think; nor is it strictly speaking, at least, according to any of the methods described in books, that I can recall. I graft all the year with equal success, except the months of November and December, in this climate. I also bud whenever the bark will separate freely, and I can procure buds. Last March I budded and saved some new roses I received from Paris, and I have budded them with fair success in November, after the frost has killed our crops, and I have moved to the plantation.

Sometimes trees that are purchased at a distance have only a small straight stem with a few lateral shoots, one or two inches long, in such a case I would make one or two grafts of the terminal or upright shoots, and bud in the spurs as soon as budding could be done. This operation has most or all of the advantages of both budding and grafting without the disadvantages of either.

ROBERT CHISOLM.

Demand for American Produce.

EXTRACT from a letter received from H. Colman, to the Editor of the Cultivator, dated London, 18th of September last. In relation to the demand for American bread stuffs in England, he says:

"There will be a quick demand for all the produce which is likely to come. The best informed and most judicious and sagacious men, are not without alarm for a very

serious scarcity of food. The utter failure of the potatoe crop in Ireland is determined, and the consequences are frightful to contemplate. It is quite general here; but I hope that the alarm with regard to the disease among the turnips in the north, is premature. The crops of oats and barley are not large—wheat is more than an average crop; but there will be no surplus, and there is anticipated a very large demand for bread stuffs upon the continent.

"My eighth No. will, I suppose, soon be through the press, as the publishers have all the matter. In this I have treated fully the subject of live stock. I have desired to avoid any improper partiality, and to place the subject in as fair and proper a light as possible. I shall leave now in a few days for the continent, and hope not to be unreasonably long before I send the ninth No."

Cows.

ALTHOUGH we have been favoured with the luxuries emanating from the cow ever since the flood, we are still very ignorant of her value, and of the proper mode of managing her in sickness and in health. We were taught to believe that it was unnecessary, indeed improper in all cases, to milk a cow before she had her first calf; and if I am not mistaken, this belief prevails universally at the present day.

Our attention was recently called to a favourite Durham heifer, whose udder was considerably inflamed and distended, nearly three months before her time of calving, and gradually increased for two months, until the size was so enormous and the inflammation so great, that we were apprehensive matter would form in the udder. To prevent this, we ordered her udder to be well bathed, morning, noon, and night, with water as warm as it could be applied without scalding. By this mode of treatment the udder was relaxed, but gradually increased in size, until we were satisfied that she could not be relieved until she was milked. The first effort brought off several pints of thick serous, or watery matter: the second day the discharge was a mixture of water and milk, and on the third day we had the pleasure of measuring seventeen pints of milk; and from this time forward until she calved—which was about one month from the first time of milking—she yielded from 16 to 18 quarts of fine rich milk every day. The calf found the udder in fine condition for sucking, the teats all soft, and the milk flowed upon the slightest compression of his lips. In this way we preserved the udder of one of the finest cows we ever milked;

and we feel very confident that if we had left nature to herself, the udder would have been spoiled.—*Tennessee Agriculturist*.

Transplanting Large Trees.

It is a very general, though erroneous opinion, that large trees cannot be transplanted with safety; and this popular mistake is more singular from the fact, that in England the transplantation of the largest trees has been a matter of daily occurrence for more than thirty years.

Ignorance of their business, is the true secret why so many nurserymen and gardeners fail in transplanting trees. It must strike even those of our readers who never thought of the subject before, that, in transplanting a tree, some regard ought to be had to the habits, soil, and situation of the tree to be transplanted; and that, if this is neglected, it becomes altogether a matter of chance whether the tree lives or dies. A tree twenty or thirty feet high, which has always been in a thick wood, is thin, tall, and fragile—quite a different plant, indeed, from the thick, sturdy tree of the same age and species which has grown up alone in a field; and it would be as absurd to expect one to flourish if transplanted to the forest, as it would be to look for a long life in the other if removed to the orchard. Again, different soils produce different habits; and the maple that has grown up in a loam, will hardly grow if transplanted in the sand. An oak, accustomed to the sunny side of a hill, will not long survive its removal to a bleak marshy exposure. Yet how often are these facts disregarded in transplanting even young trees. How then can large trees be expected to flourish after transplantation, when such outrages on their habits are perpetrated by those who ignorantly undertake to remove them.

It is as easy, however, to transplant trees thirty feet high, and secure their permanent health in their new position, if proper attention is paid to the habits of the tree, as it is to remove water from one cistern to another, or keep alive exotics by the simple expedient of preserving them in a warm room in winter. As early as 1823, Sir Henry Stewart, of Allanson, Scotland, demonstrated the practicability of transplanting trees of the largest size; and succeeded in covering a large estate with elms, sycamores, horse-chesnut, &c., in clumps and alone. His plan was very simple, and will bear detailing:

After he had selected a tree which, from the soil in which it had grown and its gene-

ral habits, he deemed suitable for transplantation to the spot he wished, he proceeded to bare the roots from the earth, paying the utmost attention not to injure the smallest fibre in the process. A mass of soil, however, was left to form a ball close to the stem, and two or three feet of the original sward was carefully allowed to adhere to it. In this state the tree was lifted from its position, and borne to the place where it was to be planted. This was effected by a machine, made of a long pole, fixed between two high wheels, the pole moving on a pivot, so that it could be raised vertically in order to fasten to it the tree while standing. The latter yet stood in the ground. The hole in which the tree was placed was generally prepared a twelve-month before; and into this the tree was as carefully set as possible. The roots were then placed as near as could be in the same position as formerly; the lower tier was first arranged, the earth sifted around them and worked in with the hand; the next tier followed; and the process repeated until the tree was firmly fixed in its new position. By this means the largest trees were transplanted with safety, and at a comparatively trifling expense. About three dollars is the cost of transplanting trees in this manner in Scotland.—*North American*.

Deep Ploughing.

At the last monthly meeting of the Highland Agricultural Society, Mr. Girwood, Featherhall, Corstorphine, read a report of experiments in deep ploughing, by Mr. Wilson, Eastfield, Penicuik. Mr. Wilson remarks, that among the various improvements which have followed the introduction of thorough draining, subsoil ploughing is one of the most important. Besides being a valuable auxiliary to draining, by breaking the tenacious till and facilitating the escape of water, it enables the farmer gradually to increase the depth of vegetative mould by the admixture of virgin earth from the subsoil. The farm on which Mr. Wilson's experiments were made is nearly level, with a northern exposure, and a soil varying from gravelly earth to tenacious clay. It had for many years been ploughed from five to six inches deep, and at that depth a hard crust or pan had formed itself, which in some places was almost impervious to water, and in a great degree neutralised the effects of furrow-draining. The first field experimented upon consisted of 13 acres, partly heavy on a clay subsoil, partly light on a gravelly subsoil. It was subsoiled across the drains in October and November, 1844;

a depth of six or seven inches having been first taken by the common plough, which was followed up by the subsoil plough to an additional depth of seven to eight inches. Two acres were ploughed in the usual way. In preparing for a green crop in spring, no difficulty was found where the subsoil plough had been in working through the crust or pan. The whole field was equally manured with a moderate supply of farm-yard dung and guano, and was sown with yellow turnips. The appearance of the whole crop was similar till August, when that portion of it in the subsoiled land took the lead, and when it was lifted in the end of October, the produce per acre where subsoiled was 26 tons 17 cwt., and only 20 tons 7 cwt. where ploughed in the old way, yielding, at 12s. per ton, an excess per acre of £3 18s. consequent on the experiment. The second experiment was made on a field of deep earth inclined to sand on a subsoil of sandy clay. Two acres were subsoiled 15 inches deep, two were ploughed six to seven inches, and two ridges were trenched ploughed 13 inches. The field was ploughed across in spring, manured in the drill, and planted with potatoes. The crop was lifted towards the end of October, when the quantity yielded by each portion per acre was—subsoiled, 7 tons 9 cwt. 2 qrs.; trenched, 7 tons 1 cwt. 2 qrs.; ploughed, 6 tons 14 cwt. 1 qr.; which, at £2 5s. per ton, gave an excess per acre to the trenched land of 16s. 3½d., and to the subsoiled of £1 14s. 3½d. Another experiment was made on a field intended for barley after potatoes. The barley was sown about the 1st of April: the subsoiled portion kept the lead throughout; the crop was cut on the 22nd of September, and when thrashed, the produce on the subsoiled land was 8 quarters, 3 bushels barley, and 36½ cwt. of straw, and on the ploughed, 7 quarters, 4 bushels 3 pecks, and 28 cwt. of straw, the difference in money being about £2 9s. per acre in favour of the subsoiled. Another small experiment was made when ploughing a field in February, two ridges of which were subjected to subsoiling to the depth of 12 inches. This was not followed by any beneficial result, and the author questions the propriety of subsoiling for a grain crop when the ground is in lea, as it is difficult to lay the furrows so completely as they should be for the reception of seed. Deep or trench ploughing, he thinks may be advantageous to soils of a deep nature, but sometimes injurious to those which are thin, with a sterile and tenacious subsoil. Subsoil ploughing, however, if judiciously performed, he considers can seldom do harm, and that a great variety of soils, especially

after furrow draining, will derive much benefit from the operation.

Mr. Girwood remarked, that he agreed with Mr. Wilson, in his views of the soils which should be subsoiled. The operation had not been followed by any great change in the neighbourhood of Edinburgh; that, however, he attributed to the previous draining and deep cultivation, which had gradually affected what subsoil ploughing is meant to produce. The immense crop of barley detailed under one of the experiments was well worthy of notice.—*Kelso Chronicle*.

From the Farmer and Mechanic.

Fattening Hogs.

To fatten a hog or an ox where there is plenty of corn and potatoes, requires no great skill, but to do it in a manner that will render the animal more valuable to the farmer when fit for market than the substance consumed in fattening would be, besides paying for the trouble of doing it, is a matter worthy of consideration.

The summer of 1836 being very dry, my corn and potatoe crop came in light, and compelled me to try an experiment, which I found to work so well that I have since followed it to my entire satisfaction. It was this; I adopted the feeding of apples, of which I had an abundant crop mixed with pumpkins, a few potatoes, and a small quantity of meal prepared in the following manner. For convenience I set in my will-house adjacent to the sty, a large iron kettle holding about nine bushels, and then had a wooden cylinder made that held from twelve to fifteen more, and hooped with iron bands, just large enough to set upon the arch outside of the kettle, and by putting a little clay or mortar on the arch before setting on the leak—as I called it—I made it perfectly tight, I then had a cover or lid fitted to the top, which was also made tight or nearly so, by laying on a piece of cotton cloth or canvass underneath it, before putting it on.

Into this kettle I first put about three bushels of potatoes washed clean, then filled to the curb with cut pumpkins, and filled the curb to the top with apples, adding two or three or more pails of water, in proportion to the quantity of meal that I intend to mix with it after mashing. After letting this boil a while I remove the cover and fill again with apples, and again make tight.

The apples and pumpkins you will notice are steamed by this process, and when all are sufficiently cooked, they are taken out, well mixed, and a half bushel of corn meal or a bucket of ground oats and peas, or of buckwheat and rye instead, added to the

mixture while hot, and thus rendered more valuable for being cooked with the mass. I think that sweet apples fed in this way to hogs, are worth nearly as much as potatoes, and sour ones more than half as much.

I never made pork with as little expense or less trouble than since I have practiced this method.

I now prepare most of my feed in this way for fattening my beef and mutton, and find it equally advantageous, indeed, I believe that I get the best profit from feeding sheep in this way, particularly my old ones. My course is, in the month of October, to select from my flock all that do not promise fair to winter well, old ewes in particular, which will be likely to die in the spring, as all sheep growers know that they are liable to do, and give them a good chance for fall feed, and also feeding them with the same kind of substances that I do my hogs, and by the first of January have them all first rate mutton, bearing good fleeces. This kind of feed is excellent for milch cows, and cows that come in early, or for ewes that are with lamb. It does well to mix with cut feed, only there should be more water put into the mixture.

When my potatoes get short, I put in beets and carrots for my sheep and cattle, and consider them much better for being cooked. Turnips are easily raised, and are very good food for sheep or cattle during the winter, yet will not compare in value with either carrots or beets. Potatoes or pumpkins are valuable for horses, fed raw. I never knew a horse to be troubled with the bots that was fed with a few raw potatoes every week.

I have made my communication rather desultory, but my principal object in this communication is to show the value of apples for fattening hogs and sheep, when mixed with other substances, and the saving to farmers from picking out their old sheep and fattening them, instead of pelting them in the fall or letting them die in the spring, as many do.

When a sheep gets old and the front teeth partly gone or pointed, the best way is to take them out entirely, as they feed better without than with them.

Yours,

A VERMONT FARMER.

Windsor co., Vt., Nov. 1st, 1846.

Deleterious effects of Brick-yards.

DR. UNDERHILL made some remarks upon the above subject at a late meeting of the New York Farmers' Club, and the following notice is taken from the *Tribune* of that city.—Ed.

At the time when his attention was first directed to this subject, the following incident occurred to establish his opinion. A friend had observed that, immediately after a severe thunder-shower, all his vineyard appeared in a sickly condition, and no satisfactory reason could be assigned for the occurrence of the phenomenon, until the investigation had proceeded sometime, when Dr. Underhill discovered that the gases of a brick-yard in the vicinity had been blown over the vineyard, and produced the disastrous effect, turning the leaves to a dark, reddish brown colour. These gases were stated by the Doctor to be more particularly injurious in the latter stage of the burning of the kiln, and derive their noxious property from the anthracite coal used, the proportion of which is, in the interior of the kiln, three pecks of hard coal to a thousand bricks, and on the outside twelve bushels to the thousand. This he knew to be the case in at least one brick-yard. If there is a light wind blowing, these gases will extend their deleterious influence for miles, the supply being kept up at the yards for hours. They are particularly detrimental to Newtown pippins, the foliage of which is destroyed for miles. The leaves are turned completely over in many cases, and one side is turned to a different colour, a reddish-brown, appearing as if touched by a vehement fire. By these gases trees are often rendered unable to furnish healthy sap for the proper sustenance of the fruit. Speaking of pippins, he mentioned that one of the finest orchards in the country, in the town of Cortlandt, Westchester county, containing from 1000 to 1500 trees, was entirely ruined, principally by the gases from numbers of brick-yards in the immediate vicinity. This subject was referred to a committee, to report to the Farmers' Club.

At a meeting of the Club held since the above, Dr. Underhill said:

The influence of gases emanating from burning brick kilns, injurious to neighbouring vegetation, is the subject, and it is more important than many suppose, to all farmers and gardeners having such mischief in their vicinity. Seven years ago I began to notice this evil, which has since caused a damage of hundreds of thousands of dollars to agriculturists. I will prove the injury or submit to the jeers and jibes of intelligent men! Whether it be this or that kind of gas, I will not pretend to say, but numerous fields and orchards from here to Albany, are severely injured or destroyed this last year, by the gases from burning brick kilns. I now exhibit specimens of Forest, Fruit, and garden vegetable leaves destroyed by these

gases from a brick kiln burning about half a mile from my farm. On one occasion, when my men were at work in the field, there was a gentle breeze attended with fog coming from the kiln, and causing a strong smell, which was perceived all over my vineyard. The men could hardly stay there. On the next day I found the vine leaves greatly injured. The leaves on my orchard were partly killed. I noticed that this occurred on the leaves which contained some moisture. In June, last year, the leaves looked as if fire had passed over them, I had no fruit scarcely in the whole orchard, consisting of twelve acres. Seven-eighths of the young unripe fruit fell off. When these gases come over the farm without there being at the time dew, fog, or rain, there appears to be no damage. Last June, the crop of apples in this orchard was very promising, but when they were as large as marbles, the kiln was burning, and there was a fog—the smoke from the kiln spread over the orchard, and the whole crop of fruit was cut off—the apples all fell off. The sap of the trees became diseased; the injury was far greater than any ever caused by caterpillars. I found forest trees and crops of grain much damaged by the same cause. If the fruit trees should happen to be in blossom when these gases were in the air, the destruction of fruit would occur fifteen miles in the direction of the wind. Orchards have been killed ten miles off by it. During the burning of these brick kilns, great volumes of gas escape for twelve hours together. Whether it be the carbonic acid gas, phosphuretted hydrogen, or sulphurous acid, I cannot decide, but the injury is felt for many miles. Half an acre of carrots, sugar beets, &c., were injured in one night. It affects injuriously all vegetation near Haverstraw. Orchards are killed for three miles. The farmers thought the evil was the plant louse or some other insect.

Prof. Mapes.—Do the brick burners use coal?

Dr. Underhill.—Yes, Sir! Fine coal—but they begin the burning with wood. My Newtown pippins are the most injured. They are rendered rusty, gnarly, spotted with rough and dark spots.

John Conklin's orchard has had nearly 1000 trees killed by the kiln gases, a quarter of a mile off.

Prof. Mapes.—I have listened to the ingenious and no doubt, accurate, observations of Dr. Underhill, and I will endeavour to give the rationale of this case. Coal is ground up with the clay by brick makers. By application of adequate heat, alum is formed from the alumina of bricks and pot-

ash. The coal contains sulphur, which heated, combines with oxygen, forming sulphuric acid. Thus from clay—the alumina—we have alum, of which infinitesimal atoms are carried off in the air. It is an error to suppose that the gases could travel in the air ten miles. The fine atoms of alum may—which being deposited upon leaves moistened by dew, fog or rain, would dissolve and directly damage the leaves.

Dr. Field.—I burned some sulphur in my garden, for medical purposes, and found that the fumes had caused immediate injury to plants within twenty to forty feet off. There was not heat enough to do the damage at all.

Dr. Underhill.—The smell from the kilns was strong, and plainly of carbonic acid and of carburetted hydrogen.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

Carefulness in Living.

I LATELY met with the following sentiment, or rather, advice of Dr. Franklin, and I think it is so practically valuable, that the readers of the Cabinet might be served with matter not worth half so much. We use our credit liberally, and forget that what it supplies us with is not our own, and are thus led into an expenditure which others too often must pay for. Farmers may find it easier to keep out, than get out of debt.

A.

"Beware of thinking all your own that you possess, and of living accordingly." This is a mistake that many people who have credit fall into. To prevent this, keep an exact account for some time, both of your expenses and your income. If you take the pains at first to enumerate particulars, it will have this good effect: you will discover how wonderfully, small, trifling expenses amount up to large sums; and will discern what might have been, and may be for the future saved, without occasioning any great inconvenience."

WHAT IS BLIGHT?—It is a sun-stroke, or a frost-bite, a plague of insects, or of fungi, a paralysis of the root, or a gust of bad air; it is wetness, it is dryness, it is heat, it is cold, it is plethora, it is starvation; in short, it is anything that destroys or disfigures foliage. Can a definition be more perfect? We should expunge the word as a substantive term from our language, and only use it in its adjective sense.—*Dr. Lindley.*

For the Farmers' Cabinet.

Cheese Making in Virginia.

TO THE EDITOR,—I enclose for the Cabinet the following communication, copied for me, I think, from the *Southern Planter*, by a friend of Petersburg, when recently on a visit to Virginia. I think it will be interesting, as showing what may be, and is done in that State.

"There is in this county what in this section of Virginia may justly be denominated a curiosity—a *cheesery*; the novelty of which induced me to accept of the very kind invitation of its enterprising and polite proprietor to go and examine its operations; and as a history of what I saw might not be uninteresting or unprofitable to your readers, I propose communicating it, hoping thereby to be able to impart at least a portion of the satisfaction which I enjoyed.

"Mr. Samuel Look emigrated from New York to this county in January, 1845. He rents a farm containing four hundred acres, one hundred of which are in wood, for which he pays an annual rent of four hundred dollars, and furnishes clover seed, plaster, &c. He commenced under very disadvantageous circumstances, having had to make entire preparations for his cheese operations, and he encountered a great drawback in the drought which prevailed to so great an extent, and the consequent diminution of the grass crop; but notwithstanding these difficulties, his success was equal to his most sanguine expectations, thereby astonishing his neighbours, who first regarded the project as visionary, and predicted that it would be a failure. The present year, of which I propose giving a more minute description, he has none of those difficulties to encounter, and is succeeding to admiration. He keeps thirty cows, which he manages to calve about the first of April. He fattens all his calves, and at one month old he carries them to market, where they bring him four dollars per head. At this time he commences the manufacture of cheese, which is continued until the first of November, each cow upon the average producing two pounds of cheese per day, making an aggregate of ten thousand and eight hundred pounds, for which he finds a ready and convenient market, at 10 cents per pound, equal in money to \$1080, and from the whey he fattens twenty hogs, which he keeps in pens at a convenient distance from his *cheesery*, and from which he accumulates a quantity of good manure. The whole of this operation is conducted without interfering in the least with the other business appertaining to the

farm. The cows are milked whilst the horses are feeding, and then the milk is turned over to the females, who convert it into cheese. In addition to this, Mr. Look cultivates quite extensively, and I might add, from present appearances, profitably. He seeded last fall one hundred bushels of wheat, which promises a rich return. He has about seventy-five acres of exceedingly fine looking corn. His oats, rye and grass, look remarkably well—indeed, everything presented a most prosperous appearance. He designs as soon as he succeeds in getting his land well taken in grass, to extend his *cheesery*, believing that he can thus realize more than by the cultivation of the soil, particularly when the additional labour and expense attending the latter are taken into consideration; and besides, he says, by that system he can greatly increase the fertility of his land; for although Mr. L. lives upon rented land, he seems never to disregard his landlord's interest. Mr. Look expresses himself delighted with Virginia, particularly with her climate, and says all that is required to make her a great State, is better roads, and a more enlightened system of education. I hope Mr. Look's success will be the means of inducing some more of his friends to follow him. I am satisfied that no portion of Virginia offers superior inducements to emigrants than Prince William county. The exceedingly low price of her land, its natural fertility, easy access to market, health, society, &c., are advantages of which other counties cannot boast. But, Mr. Editor, I have digressed from my subject. My object in writing this communication was to attract the attention of the farmers to the subject of making cheese, and I think Mr. Look, by his experiment, has demonstrated beyond cavil the practicability of manufacturing it in this county. The question now naturally arises, would it not be infinitely better for, at least, a portion of the farmers of this county to imitate the example set them by Mr. Look, and give this branch of business some attention. Whilst the farmers generally in this section who rent land and hire labour, cannot make "buckle and tongue meet," Mr. Look is realizing, after paying all expenses, the handsome sum of a thousand or twelve hundred dollars per annum; the reason is obvious. If you abstract the amount realized from his *cheesery*, the products of his farm would not more than pay expenses and support his family. He says the art of making cheese is very plain and simple, even more so than that of making butter."

S. B. H.

Prince William, June 12th, 1846.

For the Farmers' Cabinet.

Canker-Worm Moth.

FRIEND TATUM.—From an article in the third number of the current volume of your paper, page 93, I infer that the canker-worm is unknown in Pennsylvania. We have suffered so much from it here, that we are glad to find any of our agricultural friends are exempt from its ravages. During the last two or three years, the number of these insects has been very small; but the race is not extinct. The creatures are now coming out of the ground; and every morning the females may be seen on trees and fences patiently waiting the approaches of their volatile mates, or creeping along in search of a place whereon to deposit their eggs. These females are three-eighths of an inch long. They are plump and oval in shape, have two threadlike horns or antennæ, and six slender legs; but they are absolutely wingless. They are of an ashen grey colour above, and light grey or whitish beneath. The males are also ash-coloured, but they have wings. Their fore-wings are darker than the hinder pair, have a white spot on the outer edge near the tip, and a few blackish spots, frequently indistinct, upon them. They expand one inch and a quarter. A more full account of this insect is given in the article *Span-worm*, in the *Farmers' Encyclopedia*, and in the original work from which that article was wholly copied. It will be seen by the foregoing brief description, that the "insect one and a half inches long, head beautiful brown, four rudimentary wings, external pair brown, &c.," supposed by your correspondent to be "the female of the canker-worm of New England," is entirely distinct therefrom.

Yours, respectfully,

T. W. H.

Massachusetts, Oct. 18th, 1846.

Lands in Virginia.

FROM a letter from S. S. G., of Moorestown, N. J., dated the 17th ult., we make the following extract.—*Ed.*

"My recent visit to Virginia furnished me with abundant evidence that the advantages of that country have not been overrated. Indeed I believe they are not yet half appreciated. The intelligent people there are satisfied that they cannot hope for improvement without the aid of industrious freemen, and they hold out every encouragement for Northern farmers to come and settle among them. I accepted the invitation of R. B. Bolling, at whose house in Petersburg, I was very kindly entertained, to make an-

other visit to Sandy Point;* to any one fond of agriculture, and interested in the improvement of the soil, a visit to this noble estate would of itself amply repay the journey. In a communication to the Cabinet,† I described the wheat crop as it appeared in the beginning of the fifth month—he sold 14,000 bushels of wheat, after reserving about 1400 for seed; the latter part of the harvest was exceedingly wet, and the loss of grain in consequence very heavy—this fall he is seeding about 900 acres, and on ground which he thinks in better heart: we rode through the corn-field of 525 acres, from which he expects a yield of 50 bushels per acre, and I think he does not overrate it. The wheat seeded this year is in beautiful order, as indeed is everything about the farm. There needs no stronger proof of the susceptibility of this country for improvement, than this estate affords—a few years ago it was so poor as scarcely to meet the expense of cultivation; now it is highly productive, and must return a large revenue—15,000 bushels of wheat and 28,000 bushels of corn, besides the fine stock and other crops, produce a handsome sum. This estate is in the S. E. corner of Charles City county, on the north side of James River—the county of Surry is on the south side of the river, having its N. W. corner opposite Sandy Point: this county abounds in inexhaustible beds of the richest calcareous marl, is as little cultivated as any other of the eastern counties, being now chiefly valued for its timber. The land is much of it now to be had for \$2 per acre, and is susceptible of high improvement and productiveness. As soon as Northern farmers become acquainted with this region, I think it must be filled up and become one of the richest agricultural sections in the Union."

WHEN a crack is discovered in a stove, through which the fire and smoke penetrate, the aperture may be readily closed in a moment, with a composition consisting of wood ashes and common salt, made into a paste with a little water, plastered over the crack. The effect is equally certain whether the stove be cold or hot.—*Maine Farmer.*

LET the sun's first rays shine upon your head in the morning, and you will not lack a good hat to defend you from its scorching rays at noon.

* A notice of this estate may be found on pages 19 and 79, Vol. 7, *Farmers' Cabinet*.

† See last Volume, page 329.

The Potatoe Blight.

A WRITER in the *Globe* estimates the value of the potatoe crop in the United Kingdom at £23,000,000, and sets down the loss to Ireland, in consequence of last year's failure, at £10,000,000. The *Cork Reporter* calculates that out of 130,880 acres planted with potatoes in that country, 100,666 are already blighted and destroyed.

No means exist of testing the accuracy of these calculations, but the mere fact of such enormous estimates being made, is sufficiently expressive of the gravity of the question. It shows, conclusively, that under the most favourable point of view, the destruction of food must have taken place to a most alarming extent, especially when it is borne in mind that similar losses were sustained in all the great potatoe countries of both hemispheres.

The disease was introduced into Genoa in 1845, with English potatoes, and we know too well how fast it spreads; besides which, we see from the French papers that in the department of the Var the potatoes, although not much diseased in the fields, were rotting rapidly as soon as they were stored—July 17th—that the crops raised from northern seed have enjoyed no immunity; and that the coast line—we presume from Toulon to Draguignan—is now infected, as well as the hilly districts.

The farmers in the territory of Nice were already, on the 11th of July, pulling up their potatoes, in order to save them from the murrain, which had attacked their second crop. We may add, that since the Neapolitan potatoes planted in England, have proved to be as diseased as our own, there is reason to fear that no supplies can be had from Naples this year. Add to this that the mischief has reappeared in Germany, that wheat is actually dearer in Holland at the present moment than in England, and we have as ugly a symptom of impending scarcity as the amateur of high prices can well desire. Unfortunately, too, this is but a portion of the picture. Wheat is a solitary article of abundance. Turnips are but half a crop; the same is true of other roots, and of beans and peas; barley is short and oats not heavy. And where is our fruit? the apples, and pears, and plums of the cottagers and small farmers; they, too, have failed! Even in the isle of Jersey there is not more than two-thirds of the usual quantity, and Jersey is a favourable example. All these things are articles of food, either directly or indirectly. We consume them in the form of meat, if not of bread, and their places must be supplied, or the consumers must be put

on short allowance. The labourer who feeds his children with apples gives them food, not luxuries; they stand in place of something else, and must, therefore be replaced. In the present instance it appears impossible to do so, except with corn. The continent seems but little capable of assisting us in the article of grain; it will have enough to do to feed its own population.

In fact, we understand that wheat is actually exported to Antwerp at the present moment, and we must remember that the great continental harvest is gathered in. Meanwhile, in the course of last week, rice and oats have advanced in price from 1s. to 1s. 6d.; wheat, 4s. or 5s. a quarter; flour, 1s. 6d. a barrel, and meat of course is partaking of the dearth.—*Daily News*.

In the speech of the Queen, read by the Lord Chancellor at the proroguing of Parliament, on the 28th of eighth month last, she says:

"Her Majesty has to lament that a recurrence of a failure in the potatoe crop, in an aggravated degree, will cause a serious deficiency in the quantity of a material article of food.

"Her Majesty has given her cordial assent to measures by which this calamity may be mitigated in that part of the United Kingdom where the cultivation of the potatoe has hitherto afforded the chief supply for the subsistence of the people."

This is conclusive proof that the disease is of a very grave character.—*Ed.*

Agricultural Society of Prince George County, Md.

We have received through a friend the proceedings of this Society, containing an Address by John H. Bayne, from which the following extract is made. Our friend A. C. gave some account of the Annual Exhibition in our last number, page 131.—*Ed.*

In no occupation can a healthful activity of the mind and body be more happily blended than in the pursuit of horticulture. Its manual operations are so promotive of health that the professional man, and even sedentary females, may devote advantageously a portion of their time to it in each day. The perfect order and beautiful arrangement in the vegetable kingdom are calculated to inculcate the lessons of love, kindness and philanthropy.

As a scientific pursuit, it strongly recommends itself to the contemplative inquirer. Whether we regard it as an art or science, administering substantially to our wants, or diffusing useful knowledge, it merits our highest consideration.

The study of the organic laws of nature, of the culture of fruits, flowers and vegetables, should be familiar to all. It is a saying of old, that he who succeeds in making two blades of grass grow where but one grew before, merits the appellation of benefactor. The same doctrine will apply with equal force in reference to the introduction and cultivation of valuable fruits and vegetables. The sails of commerce which whiten the ocean, may bring back riches for the merchant. The name of the philosopher who makes discoveries in the abstract sciences, will be handed down through successive ages. And even immortality will be acquired by the military chieftan who has distinguished himself by the extermination of thousands of his fellow beings. But all this is "the bubble reputation," and when compared with the names of the true philanthropist and benefactor—those who have made valuable improvements in horticulture and agriculture—should sink into the shade. But we rejoice to say a new era is dawning upon us. A taste for these pursuits is pervading the whole Union. Every grade of society is becoming interested—and we hail it as a happy omen of progressive refinement. The possession of wealth is not necessary to their enjoyment. The picturesque scenery; the varied landscape, and the fragrance of the sweetest flowers, can be enjoyed by those in humbler walks of life. The beauties of Flora and the bounties of Pomona are within the reach of the humblest cottager. Says Lord Bacon, "God first planted a garden; and indeed it is the purest of human pleasures; it is the greatest refreshment to the spirits of man; without which buildings and palaces are but gross handy works."

In the departments of floriculture and ornamental gardening, we find many persons who recoil at the mere mention of them. They oppose them on the ground of yielding no revenue, as if the only design in our creation was the accumulation of wealth. But shall we reject those pursuits which are so well calculated to soften the asperities of our nature, and which have been the choice of the virtuous and enlightened from time immemorial. There is no surer evidence of cultivated taste, or of rural happiness, than we see in those floral ornaments, whether appended to the humble cottage or to the splendid palace. Nature, in the display of her inimitable floral gems, will always afford a fascinating employment. No pursuit is more congenial with female character, or tends more to elevate and refine it. In the shades of rural retirement, her virtues

expand; woman is rendered more lovely, and domestic happiness is consummated.

To afford you ocular proof of the wonderful achievements of horticulture, I would refer you to our large cities and their surrounding country. Their markets are crowded with the choicest fruits, flowers, culinary productions, and ornamental plants in countless profusion. Their environs studded with villa residences, elegant gardens, ornamental grounds, conservatories and graperies—affording comforts and luxuries to millions, and profits to tens of thousands.

The introduction of new and valuable fruits seems to be an absorbing subject with Pomologists throughout the civilized world, and it is certain that nothing contributes in a more eminent degree to the comforts of the consumer, or affords a greater profit to the cultivator. Ripe fruits are healthful, light, nutritious, and of easy digestion; producing a chyle admirably adapted to the functions of the human body. From the qualities which they possess, their habitual use, according to Mr. Knight, destroys the artificial appetite for strong fermented liquors and the preparations for alcohol. But to go into a classification of the various fruits of standard excellence, and to give directions for their cultivation, would require a volume. For all necessary information, I refer you to the works of Lindley, Thatcher, Kenrick, Downing, and Hovey's invaluable Magazine of Horticulture.

London, Lindley and Knight of England, and Van Mons of Belgium, by their unwearied labours and profound researches in Pomology, have left enduring monuments to their memories. Knight and Van Mons in establishing their respective theories, have originated more valuable fruits within the last forty years, than had been done previously by the whole world during a period of twenty centuries. Knight's plan was accomplished by cross fertilization. The pollen or fertilizing powder is delicately removed from one flower and transferred to some tree bearing flowers strongly related to the first, and is there carefully placed upon the summit of the pistillum in the flower intended to be fertilized. This prepared flower is then protected with thin muslin or gauze, to exclude the bee or insects which would otherwise frustrate the process. The seed produced from these hybridized fruit are carefully saved and planted, and according to the qualities of the parents, you obtain new and valuable varieties.

The immense collection of fruits added to our lists by the indefatigable labours of Van Mons, has been astonishing. His theory for

the multiplication and improvement of the various fruits originated with himself. And had it not entered into the conception of that extraordinary man, in all probability it would have continued to this day locked up among the arcana of nature. No predecessor had left a ray for him to begin with. The lights of science could not be called in to his aid. It was only to be demonstrated by unwearied perseverance through the protracted and inexplicable operations of nature. It was the suggestion of his own mind. The result of his experiments has established an important era in the history of fruits. Van Mons ascribes the success of his experiments, by which so many fruits of such great merit were obtained, to this principle: That in proportion as a fruit becomes removed from a state of nature by repeated regeneration—that is, by always planting the seed of the last production—in the same degree will the fruit become ameliorated, until it attains the highest perfection of which it is susceptible. In the application of this principle, he has ascertained that the Pear, when raised from the seed, requires seven generations to arrive at its highest perfection. The first generation, or the period from planting the seed of the domesticated pear, to the time of its first fructification, required a period of fifteen years. The second generation embraced a period of ten years; and so on with the period for every successive generation in a decreasing progression. The whole period to accomplish his theory requiring about forty years.

The Apple, upon the same principle, required a period of four generations. The Peach, Apricot, Plum, and Cherry, required three generations. From the astounding results growing out of the experiments of this man, we have a legacy bequeathed to us, which affords us an advanced position, to prosecute our experiments with a certainty of success. It will be the privilege of future generations to determine the limits that nature will go in the amelioration of fruits. In illustration of this theory: who, for instance, could detect the relationship between the delicious class of Beurrées and the little austere wild pear, which grows spontaneously in your field? What resemblance can you trace between the magnificent Gage Plum and the savage Sloe; or between that king of apples, the Golden Pippin, and the sour Crab? And last, though not least, who could recognise in the native Strawberry the type of that splendid variety denominated Hovey's Seedling. But as astonishing as these transmutations are, they have been produced by this ameliorating process. I have enumerated these seminal produc-

tions to show that the Pomologist has been richly rewarded for the prosecution of his employments. Time will be usefully and honourably occupied in the origination and introduction of fruits based upon these theories. This pursuit recommends itself strongly to the young—and to create a taste for it should be the effort of those who feel an interest in their happiness. Children soon become deeply interested in employments of the garden or field, and acquire a stability of character and firmness of purpose which enable them to resist the seductive influences of vice; and in future time, as you examine the annals of natural science, you will find their names recorded as distinguished patrons.

But of the diversified productions of the field and garden which it is our privilege to enjoy, few are indigenous to America. Of the cereal grains, for instance: Wheat and rye were originally brought from Siberia; buckwheat from Asia; rice from Ethiopia. Of our vegetable productions: The artichoke from Brazil; the cauliflower from Cyprus; asparagus from Asia; the pumpkin from Astracan; the ruta бага from Sweden; and the tomato from South America. Our fruits from countries equally remote. The pear came originally from Europe; the peach from Persia; the apricot from Armenia; the plum from Lyma; the cherry from Pontus; the quince from Austria; and the almond from China. It is evident that in the distribution of the bounties among the various nations of the earth, Providence has designed to show us our mutual dependence upon each other. In the discharge of the obligations imposed on us for these blessings, we should disseminate those productions of the garden and field extensively. For all men will eat fruit, says Sir William Temple, so that the choice is only whether one will eat good or ill—and of all things produced in a garden, whether of vegetables or fruits, a poor man that has one of his own, will eat better than a rich man that has none. And I rejoice to say that a poor man has the privilege of enjoying those luxuries almost in an equal degree with the rich man.

"Be active, be active—
Find something to do,
In digging a clay bank
Or tapping a shoe.
Don't stop at the corners
To drag out the day—
Be active, be active—
And work while you may."

Artesian Well.

An attempt is making at East Boston, to sink an Artesian well. The process was by boring a sufficient depth to obtain a supply of water for the accommodation of the citizens upon the island—the population of which is so rapidly increasing in numbers. The operator has abandoned the common earth auger, and has invented a cast iron tube, about eight inches in diameter, and about ten feet long. It is armed at the end with two prodigiously strong chisels, and just above them is an ingeniously devised valve. At the other extremity is a wrought iron handle, fastened to which is a stout, short-linked iron chain to raise it up and down. When in action, it operates upon the principle of a common chopping knife so familiar in mince pie manipulations. The engine raises it and then lets it fall, like the perpendicular movement of the dasher in the obsolete method of churning butter. As the bits of stone or other materials accumulate every time the massive tube drops, they are forced up into the tube and retained. Finally, when enough has been chopped to fill the cylinder of the drill,—the name given it,—the engine draws it to the surface to be emptied. The cost of the one Mr. Higgins is labouring with was \$600. The Boston Transcript gives the following account in relation to this invention:

Before resorting to this unique contrivance at all, an ordinary well was dug 140 feet, to a stratum of hard, compact gravel, interspersed with water worn stones of various sizes. On this Mr. Higgins set a cast iron tube of 10 inches diameter; and another on the top of that, secured by water tight joints, and so on, to the very outlet above ground. This long, ponderous cylinder is carefully braced on the outside all the way, to keep it exactly perpendicular, and within it the mighty battering ram is let down and set in motion against the realm of Pluto. As fast as the hole was deepened, the weight of the superincumbent pipe pressed down farther, paring the sides as it ground along. All accumulations from that source, with its own chips, were secured by the valve. After passing through 10 feet of the mixture described, the instrument struck a hard, blue slate stone, through which Mr. Higgins urged his way at the average rate of six feet a day for 145 feet. Next he came upon a bed of talc, of a greenish grey colour, greasy to the touch, one variety being recognized among tailors under the name of French chalk, and used for marking on cloth the course of the shears. Finally, on Saturday evening last, the cutter had

penetrated eight feet into that stratum, making the entire depth at this date 303 feet. The tube rests on the slate by which it is sustained; and water, soft and agreeable in flavor, rises in it to the height of 200 feet; probably it comes from between the seams and fractures of the rock, since none can possibly be forced in laterally.—*American Rail Road Journal.*

Improvement in Nail Making.

We have recently examined the drawings of a machine for manufacturing horse shoe, and other nails, on a new and ingenious plan, patented by Mr. Jedediah Holcomb, of Brandon, Rutland county, Vermont; and also have seen some specimens of nails manufactured by this method. They are made from hammered plates, with the grain of the iron lengthened, and the nails and proportions appear as perfect as those made by the usual hand process. By Mr. Holcomb's method a good mechanic can make 400 lbs. of horse shoe nails per day. The machinery is simple in its construction, and promises to work an entire revolution in the nail manufacture. He has taken measures to secure patents in England and France for his invention.

In addition to the above, which we copy from the *Eureka*, we can speak in the most favourable terms of the invention, and from a personal interview with Mr. H., of the above machine, we are convinced that the utility of the invention is very great. From data in our possession we estimate the quantity of horse shoe nails used annually in the United States at 2000 tons, and if by this invention three cents per pound can be saved in their manufacture, the gain would be quite a *desideratum* for those interested.—*Farmer and Mechanic.*

ADVICE TO YOUNG MEN.—"Let the business of every one alone, and attend to your own. Don't buy what you don't want; use every hour to advantage, and study even to make leisure hours useful; think twice before you spend a shilling, remember you will have another to make for it: find recreation looking after your business, and so your business will not be neglected in looking after recreation: buy low, sell fair, and take care of the profits; look over your books regularly, and if you find an error, trace it out: should a stroke of misfortune come upon you in trade, retrench—work harder, but never fly the track; confront difficulties with unflinching perseverance, and they will disappear at last; though you should even fall in the struggle, you will be honoured: never shrink from the task."

Crops in Scotland.

We insert the following, taken from the *Kelso Chronicle*, not entirely on account of the information it gives in relation to the crops, but partly as an illustration of the careful estimates made by our British friends, of every thing that throws light on the amount of so important a matter as bread stuff. With their dense population, and the consequent vast amount daily consumed, these are all important to the welfare and even existence of the people. With our vast extent of country, prolific soil, and sparse population, we can scarcely comprehend the causes of anxiety that exist in the older countries, about what seems scarcely to cost us a thought.—Ed.

THE harvest being now concluded, not only in this district, but with few or unimportant exceptions, all over the county, and having had sufficient deliveries of the new grain to enable us to judge of the quality of the crop, and from the best information we can collect to form an opinion of its extent, we now do ourselves the pleasure of submitting to you the following observations.

In regard to the general course of the weather during the season, we may remark that oats, and the earlier sown barley, were got into the ground under very favourable circumstances, between the middle of March and the middle of April; after which, owing to rainy weather, the ground was never in very good condition to receive the later sown barleys; from the last week in May until the last week in June, the weather continued very fine, and during many days it was oppressively hot, in fact, much more so than is usual in this climate. Towards the end of this time the spring crops on all dry lands appeared to be suffering from the drought. During all July and the greater part of August, although we had a high temperature and occasionally fine dry days, the general character of this period was unusually moist with severe thunder storms and deluges of rain, frequently sufficient to raise the streams as high, or even higher than during the winter floods. The first week of August brought us to partial harvest, and in two weeks thereafter the whole crop had ripened with extreme rapidity, but the cutting down and carrying was much interrupted by the unsettled character of the weather, until the last week in August, when it then became very favourable for harvest operations, and has continued so ever since; in fact, notwithstanding the partial interruptions during August, we have never known a season when the crop was better secured, or with greater facility to the farmer.

Wheat occupied fully its usual breadth. It is of fair quality, and with the exception of a small portion carried too hastily, has

been all stacked in fine condition. The yield per acre may be estimated at one-sixth under an average produce, and the straw is deficient in bulk. Some samples weigh 64 lbs.; but best runs will not much exceed 61 lbs. to 62 lbs.; second, about 60 lbs. per bushel, while some will come a little under that.

Barley held beyond its ordinary breadth. It has all been stacked in fine order. In bulk of straw it is very deficient. The yield per acre we reckon to be a full fifth under an average. Being well ripened, it is of good colour, and has been found to malt remarkably well. In weight it is nearly 2 lbs. per bushel under last year's, but it is thought its intrinsic quality will compensate for the deficient weight. Our best samples weigh only 54 lbs.; good runs, 51 lbs. to 52 lbs.; ordinary about 50 lbs.; and inferior as low as 47 lbs. per bushel.

Oats.—The breadth sown this year certainly did not exceed that of last year. This crop has been well secured, and appears bulky in the straw. The yield per acre, is variously estimated, and we have much difficulty in forming an opinion; on hard soils it is probably very deficient, while on the freer or lighter soils, and even on high ground, we consider it fully an average. On the whole, we are disposed to estimate it at not more than an eighth or a tenth below an average. The weights, per bushel, are—best, 42 lbs.; second, 38 lbs. to 39 lbs.; and inferior down to 35 lbs. per bushel; being from 2 lbs. to 3 lbs. per bushel lighter than last year; notwithstanding which, their meal quality is much better than the weight indicates.

Beans occupied much more than their usual breadth, and in some parts of the county nearly double; but the yield per acre, will not be half the usual average. They have, doubtless, been well secured; and the quality, of such as we have seen, is satisfactory. They became prematurely ripe, and appear to have been peculiarly affected. Many think they suffered during the season in a manner analogous to the potatoe, as the leaves were similarly blackened about the same time.

Peas.—The quantity sown in this district is so very unimportant that we deem it uninteresting to offer a remark on this portion of the crop.

Potatoes, whether planted whole or cut, or whether the seed was tainted with disease or seemingly sound, seldom braided better, or had a more promising appearance until about the third or fourth week in July, when the tops were universally blighted, and disease appeared among the tubers,

manifesting itself in many of the larger or later kinds in immediate and complete rotteness, and in others, probably of the firmer sorts, causing a dry brownish discolouration under the skin; while in some of the earlier varieties the roots remained sound. The crop we can only estimate as a total failure, although doubtless many of those not entirely rotten, may be used for cattle-food or otherwise; while perhaps a twentieth part of tolerably sound potatoes may be selected out of the crop. It is difficult to offer any useful opinion as to the cause of this inscrutable disease: it appears to us to depend on some unusual state of the atmosphere, and we are led to form this opinion from believing that several of our hardy forest trees, ferns, and even the common nettle of the country, appeared by their leaves as if affected in a similar manner to those of the potatoe.

Turnips occupy a large breadth. The crop is very various—on really good turnip soils—where sown in good time—they are fine, while on hard or wet soils they are a poor crop. They have improved a good deal within the last few weeks.

There is a considerable quantity of old wheat held by the farmers, but little or none of any other kind of grain. Comparatively high prices will probably rule until another harvest; but we may expect very heavy importations of foreign grain, which will serve in some measure to moderate them.

For the Farmers' Cabinet.

Farmers' Tools.

TO THE EDITOR,—It is a common saying, as old as one of the Grecian philosophers, that "time is money;" and old Richard said that a "penny saved is as good as two pence earned." Inasmuch as the income of the farmer under ordinary circumstances are slow, and are laboured for in the sweat of his face, before they come at all, it is all-important that his outgoes should be few as possible. In order to reduce them within as narrow limits as practicable, he must make on his farm, and within himself as many of the articles he may need, as he can, without making them cost him more than their actual purchase would. A word to the wise, may be improved upon, and I venture, though perhaps rather deficient in the matter myself, having but little mechanical turn, to suggest to my fellow farmers, the importance of providing our sons and labourers with tools, and a convenient place for using them, so that simple articles necessary in our business may be made, as well as repairs done at home, without the

waste of time occasioned by taking them to, or of money in bringing them from the mechanic. We need hardly be reminded how much may be done in this way in stormy weather by our boys, when they could do but little else. But to carry out these views, a workshop as well as good tools, should be provided. The necessity also of keeping these tools in their places, should not be lost sight of, or habits of carelessness may grow up in youth that will be hardly overcome in manhood. To me the buildings on a farm kept in good repair—the gates and doors, and latches, &c., all as they should be, give a tidy feeling to an observer, and where boys are accustomed to the use of tools, this is apt to be the case.

THRIFTY.

Go forth into the Country.

Go forth into the country,

From a world of care and gulf;

Go forth to the untainted air,

And the sunshine's open smile;

It shall clear thy clouded brow—

It shall loose the worldly coil

That binds thy heart too closely up,

Thou man of care and toil!

Go forth into the country,

Where glad some sights and sounds

Make the heart's pulses thrill and leap

With fresher, quicker bounds.

They shall wake fresh life within

The mind's enchanted bower;

Go, student of the midnight lamp,

And try their magic power.

Go forth into the country,

With its songs of happy birds,

Its fertile vales, its grassy hills,

Alive with flocks and herds.

Against the power of sadness

Is its magic all arrayed—

Go forth and dream no idle dreams,

Oh, visionary maid!

Go forth into the country,

Where the nuts' rich clusters grow,

Where the strawberry nestles 'mid the furze,

And the holly-berries glow.

Each season hath its treasures,

Like the air, all free and wild,—

Who would keep thee from the country,

Thou happy, artless child!

Go forth into the country,

It hath many a solemn grove,

And many an altar on its hills,

Sacred to peace and love.

And whilst with grateful fervour

Thine eyes its glories scan,

Worship the God who made it all,

Oh holy Christian man!

Dublin University Magazine.

Virginia Lands.

A FRIEND who feels a lively interest in the resuscitation of Virginia lands and the promotion of Virginia interests, has copied the following from the *American Farmer* of last month, and forwarded it for insertion in the Cabinet.—Ea.

MR. EDITOR,—I herewith give you some extracts from a letter I received from a friend of mine, who is now living in Surry county, Virginia. You are aware that much is said and a great deal written and published about the advantages of going to Virginia to buy land, and farm—feeling an interest in giving the experience of others well calculated to judge, for the benefit of your readers, I have copied part of the letter in order that some might be benefited. The writer is a gentleman somewhat advanced in life, raised a farmer, and always followed it; he had a good training and good land to operate on, in a part of Chester county, Pa., that will compare with any other land in the State; at least in any other part of Chester county; added to this, he is an agricultural statistic, a plain blunt man, who writes what he thinks and sees, without fear of being called in question by any. I had written to him and stated several points that I wished information on; his letter takes these separately, and answers them very satisfactorily.

"Sept. 1st, 1846; Never in my recollection, have I enjoyed good uninterrupted health so long, as since I came here, and all the family have been well except M., who has had something of her old complaint—I believe Erysipelas. I see nothing here indicative of sickness; if people anywhere would live as many do here, they would be sickly; out late at night hunting, and going home drunk and reckless of every means to preserve health; if not so, why the undue proportion of sickness and death among the males, which is about four to one; in most countries they are about equal. I do believe, all things considered, there cannot be a better place to live, or a more delightful climate; I have felt far warmer weather in Pennsylvania than here, and my Philadelphia newspaper says it has been warmer at New York than here. We have as kind neighbours as ever honoured a neighbourhood; some of them have endeared themselves to us, beyond what you could imagine. I speak advisedly when I say, a man can fix himself here better for \$1000 than he can for \$10,000 in Pennsylvania. Two gentlemen, one from near Lancaster and one from Franklin county, were here to see the place, through a letter I wrote to the Rev. M. B.—they all like the place very much, and wonder why I should be the first discoverer; one

of them was looking at a place of 600 acres, price \$4000; he told me while looking at the land, that he could sell his place of 120 acres, before he got home for \$131 per acre, \$15,720, and he was sure if he was a young man, in seven years he could make the place here as good as his own; only look at that! he is a man of intelligence, and owns one of the best farms in Lancaster county, and was attracted here by M. B. sending to him a paragraph of my letter. Why sir, there are inexhaustible marl beds here, that on analysis contain 97 per cent. pure lime. Pequa lime, Chester county, Pa., contains 20 per cent. magnesia, a very deleterious article in agriculture. I have seen the western part of Pennsylvania and Virginia, and the eastern part of Ohio, and have read and heard much of other parts, and am free to say, there is none equal to this. One Pennsylvanian has already bought 1300 acres here for \$2,600, and is to move here in October; he is now on his way, and stopping in your city at present. I have built myself a small house, cleared some of the land near it, and planted some corn, oats, vines, &c.; much of it had a stump, or perhaps two, to every square yard, and it was almost impossible to scratch up the soil; the soil is far beyond anything I could expect, beans and field-peas excellent, pumpkins not good, potatoes tolerable, oats poor; you can hire a man, horse and cart, to haul for about thirty cents a day. Hay, there is none in the county; blades sell for seventy-five cents per hundred. In fact there is no such place in the United States, where the Supreme Being has done so much and man so little. Slavery or something has paralyzed every nerve, and the choicest blessings are overlooked and unappreciated; some have marl lying on the top of the ground, which is about equal to a heap of dung and one of lime, inexhaustible in their nature, and will not use it, because those who do use it, make use of a great deal of dung; and say they, if marl is what it is said to be, why do they use dung. There are some great bargains in land offered here, such as would astonish the most sceptical; the people here are aware of their deficiency in farming, and are anxious for Northern men to settle among them; continual applications are made to me to sell land for them; there is an apple-still in blast now on about every other farm, most of them are without shelter; they set up attending to them all night; they are fifty years behind the age; in proof of this they count their money in shillings and pence, think there is no hospitality without spirits; big-hill their corn, as was done when I was a boy; they are igno-

rant of any of the facilities of bettering the condition of mankind; as their fathers did, so do they."—*American Farmer*.

For the Farmers' Cabinet.

Progression in Farming.

TO THE EDITOR,—We do not perhaps hear so much said now-a-days against *book farming*, as we did a few years ago. I am inclined to think, however, that we yet hardly appreciate to their full extent, the labours of the enquirer into agricultural science. If we would save labour—and who has more need to do that in his operations than the farmer?—we must avail ourselves of all the light which the experience, and even the speculations of others, can throw upon the means of accomplishing our object. There is so much good sense in the following remarks, which I find in the *New York Journal of Commerce*, that I conclude the readers of the Cabinet may not altogether escape profit by looking them over. It is therefore that I send them. O.

"Farming, like all other things, and perhaps more than other things, is in a revolution. We once knew as much about growing corn, potatoes, and grass, as our farming neighbours; but we have glanced at enough of the science in its modern improvements, to feel that all we knew is of very little worth, and that in attempting to write about farming now, we are more likely to get laughed at than admired. But no matter, farming has become a science. If a farmer wishes to grow wheat on his land, he sends wheat to a chemist to be analyzed, that he may find of what it is composed, or rather looks into some modern work on chemistry, and reads it there. He then sends a sample of earth from his lot to the chemist, to ascertain of what ingredients the soil is composed; and whatever of the component parts suited for wheat is not found in it, he procures and spreads upon his land. A field may have in abundance all the ingredients for the production of wheat but one, and yet not be able to produce wheat. By science, the Grahams have discovered the appalling fact, that butter and beef are in the grass and the fruits; that the cow is only the manufacturer; and that she, like the transmuting priest, abjures butter and beef, and yet eats butter and beef all the while. The farmer who has no science, will perhaps, at great cost, add those ingredients of which there are already enough; but that will not cause a crop to grow. This accounts for the fact which is often so surprising, that

manure which has produced great crops on one soil, has no good effect at all on another. A scientific farmer knows little of poor land. All land is good to him, for it will produce well if only furnished with the proper ingredients. So land that would only produce a very poor crop, has been made to produce a very large crop, by spreading upon it one or two deficient ingredients. These ingredients are, some of them, to be found in almost all substances: lime of oyster shells, ashes even of anthracite coal, charcoal dust, fish, bones, &c. Everything is composed of ingredients which must be had for the reproduction of itself, and many other things. Fruit trees cease to bear often, because they have exhausted the soil of one or two of the ingredients which compose their fruit. Give them but these, and they will at once return to production. A pear tree may grow in a soil which has not all the qualities necessary to constitute pears, and it can no more make pears without the necessary ingredients, than the Israelites could make bricks without straw. One crop exhausts one set of ingredients, and another to some extent a different set; and so farmers learn the fact without knowing the cause perhaps, that the same crop should not be grown for successive years on the same land. Yet there is no difficulty in growing the same crop interminably, if only the exhausted ingredients are supplied.

"A great deal has been learned about the mode and time of cutting and curing hay and grain. Grass, which while lying out to be thoroughly dried, perhaps may get repeatedly wet, makes much better hay if, with much less drying, it is preserved with a bushel of salt to a ton. Salt is often cheaper than hay, so that the farmer makes a profit by putting it in, while the labour of curing is much diminished, and the good qualities of the hay much increased. Wheat cut in the milk has been found to weigh more pounds to the bushel than when left to ripen to the usual time, and oats were still more increased in weight. So farmers have perhaps been suffering great loss for ages, by cutting their grain at too late a stage of its progress.

"The application of science to agriculture has developed wonders in the capabilities of the ground, which have lain from the creation unobserved. Men are astonished when they see what boundless blessings the Creator has spread thick around, and how slow the race has been in observing them. They have spent century after century in shedding each other's blood, in creating and spreading poisonous superstitions, and in every possible way destroying all that was good. Despis-

ing the blessings of creation and Providence, they have sought their happiness in the employments of fiends; and if the malice of men could but have had its way, the race would long since have been extinct, and the earth would have rolled on to the end of her course, her treasures unexplored and useless. Science shows us that the capacities of the earth have hardly begun to be developed, and the human family hardly begun to exist, either in numbers or individual enjoyment. Evidently no sort of conception has been formed in the minds of more than a very few, of the swarming millions which this earth is capable of sustaining in luxurious plenty. Land and labour have been brought so ignorantly together, that nothing almost has been the product. The meagre stunted crops which have so poorly repaid the labours of the farmer, have exhibited the measure of man's ignorance rather than of earth's barrenness. We are opening now upon an era, when every field will be a scientific laboratory, most interesting in its operations to every noble feeling. The change will operate to compensate the farmers near the great markets, for the competition they endure from the cheapness of Western land. In proportion as the quantity of crops is increased, the value of proximity to market is increased. If the crop of wheat were doubled per acre, the expense of transportation per acre would be doubled, and this would go to enhance the value of land near to market, to the amount of the capital upon which this saving would pay the interest. But when we come to fruits and vegetables, which decay rapidly, or are injured by much travelling, or are of great bulk, compared with their value, then we have another element of value for land near to markets.

"We are indebted for the most of these suggestions to Mr. Pell, whose fruits, vegetables and grains, attracted much attention at the late Fair, and now constitute a museum at the store of Mr. J. B. Murray, No. 25 Old Slip. We do not however mean to make Mr. Pell responsible for any blunders which we have committed, in repeating from memory a little outline of the very interesting conversation of half an hour which we had with him. We do not suppose these things are as new or interesting to every body as they were to us; but they will perhaps set some of our readers upon a track that will bring them to more thorough and exact information."

In London there are markets for the exclusive sale of poultry and game; in Dublin, there is one wholly devoted to that of eggs.

For the Farmers' Cabinet.

Fine Crops of Corn.

MR. EDITOR,—Having a little leisure, I concluded to employ it in giving you an account of the corn crop grown this season on the farm of the brothers Samuel J., Ebenezer J., and David D. Dickey.

Field No. 1, containing eight acres and one hundred and forty-two perches, produced 1037 bushels of corn, averaging 116 bushels and 21 quarts to the acre. Field No. 2, containing fourteen acres, three roods and thirty perches, produced 1145 bushels, averaging over 76 bushels to the acre. No. 3, contains sixteen acres and fifty-six perches, and produced 1,110 bushels, averaging over 68 bushels to the acre; making in all 3,292 bushels of shelled corn on forty acres and twenty-eight perches, averaging 82 bushels to the acre. Lest some persons should think there was some guess work about measuring either the field or the corn, it may be proper to state, that the person who surveyed the ground, has been qualified to the measurement of the same; one person measured all the corn on field No. 1, and has been qualified to the accuracy of his account: as also the persons who measured the corn on fields Nos. 2 and 3, are willing to be qualified to the accuracy of their accounts.

I will now state the manner in which the corn was planted, worked, and manured. Seven acres of field No. 1, had sixteen cart loads of manure to the acre, of rough manure from the barn-yard spread on the sod, and ploughed in about seven inches deep, with the Prouty plough. I do consider it very important that the ploughing should be well done, that all the ground should be turned up, and to a good depth, for any crop, but more particularly for corn. The ground was then rolled with a heavy roller, and harrowed over once with a spike-tooth harrow; it then got two strokes with a large cultivator, about five feet wide, with nine teeth in it, similar to the teeth in the small cultivators. I value this implement very highly, and it is one I think no farmer should be without; it pulverizes the ground, and leaves it in a better state for planting than any other harrow that I have seen in use. I always harrow the ground well before planting corn, as it can be done more effectually and at less expense than at any other time. There were then spread on five acres of the field 15 bushels of crushed bones to the acre, and 30 bushels of ashes on the balance of the field, with the exception of about an eighth of an acre, that had neither bonedust nor ashes. It might be well to state here, that judging from that part of

the field that had neither bonedust nor ashes, there was no perceptible difference in the corn at any time in the season; nor do I believe that the crop was increased five bushels to the acre, by either of the above mentioned manures; but on the two acres that had no barn-yard manure, there was a shade of difference, and the corn was not quite so good there, as upon the rest of the field. The roller was then put to work again, and followed with the corn-drill, which, by the way, is the manner we plant all our corn, and I am satisfied that more corn can be raised planted in this way, than by planting in hills. I was induced to try this way of planting corn some eight or nine years ago, on account of having a field that was very hilly, and wishing to put it in corn, and being unable to work it more than one way, I concluded to drill it in by hand; but after planting one or two rows, I found it rather a slow way of doing business. I set to work, and knocked together a kind of machine for dropping, which answered the purpose very well, the ground having been marked out with a plough previously. When we came to take off the crop in the fall, I found that we had so much more corn than usual, from the same number of acres, that I concluded I would make a drill that would perform the whole operation of marking, dropping, and covering, which, from some little alteration made on it since, does its work about right; one man and a good horse will plant about eight acres a day with the drill. On field No. 1, the corn was planted in rows, three feet nine inches by six inches, and thinned out after it came up to about one foot. After the corn comes up, we go over it twice generally, with the large cultivator, taking out the middle and two front teeth, and in this way doing double duty; and when the corn gets large enough we pass through it twice with the small cultivator, never, in any case, allowing a plough to go in it after the ground is ploughed. Fields Nos. 2 and 3, were drilled in, four feet by twelve or fourteen inches, and worked in the same way, with the exception, that no manure of any kind was put on either of them.

E. J. DICKEY.

Hopewell, Chester co., Pa., Dec. 8th, 1846.

The above statement showing a yield of nearly 2,300 bushels on 40 acres, gives a very favourable specimen of Chester county corn raising. It is a highly interesting account, and should stimulate all of us who hold the plough to aim at similar results. We hope the leisure spoken of by our friend in his private note, will be found, and that his promised communication will be forthcoming.—Ed.

An Important Decision.

WE make the following extract from the opinion of the *Hon. Ellis Lewis*, given in a recent important case, brought before the Court of Quarter Sessions in this County, (of which he is the presiding Judge.)

A man by the name of John Lutz, had leased lands of Henry Hildebeitler. After the expiration of the lease, a dispute arose between them as to which was entitled to the straw of the "way-going crop." Hildebeitler insisted that the straw belonged to him, and that it should remain on the premises for the purpose of enriching the land—while the other as strenuously contended that half of it rightfully belonged to him, as well as the grain crop, and was about carrying the grain, in the sheaf, from the premises. Resistance was made to this; and the result was a prosecution against Lutz for assault and battery.

In giving the charge of the Court, Judge Lewis made the following remarks,—for which we are indebted to the *Union & Tribune*.

"The moment the relation of landlord and tenant is created by the parties, the law enters into the contract and forms part and parcel of it, and the rights and duties of each are established by law, without any express stipulation in the contract. It requires no provision in the lease to bind the tenant to keep the premises in repair, to prevent waste, and to farm the land in a husbandlike manner. These are obligations implied by law, and growing out of the relationship of the parties. Nothing short of an express contract can relieve the tenant from the performance of these, the necessary duties of his tenure. The principles of good husbandry require that the straw raised upon the premises should be returned to the land with the accumulations arising from the stock kept on the farm. This is the general custom of the State. It has existed from the earliest settlement of the country. No two intelligent farmers, acquainted with the business of agriculture will differ in opinion on the subject. Any other course will impoverish the land and thus operate injudiciously to the tenant—to the landlord—and to the general interests of the community. It is no answer to say that lime, and other means of enriching the soil, may be procured. These are well enough in aid of the natural sustenance of the land, but they are not regarded as a substitute for it. There may be cases where the owner may find it to his advantage to exchange straw for manure, or for the means of purchasing it. But these are exceptions to the general course of husbandry. The interests of agriculture, the custom of

the state, the principles of good husbandry, and, as I believe, the law of the state is against the removal of the straw from the premises, unless the tenant has secured this privilege by the express provisions of his contract. Entertaining this opinion, and believing that the decision in *Craig vs. Dale* will not be adhered to by the Supreme court, I cannot advise that this defendant should be convicted of a crime, for no other offence than the moderate assertion of what nine-tenths of the farming community believe to be his right—a right sanctioned by custom—maintained by good husbandry—and which nothing but ignorance or infidelity in the tenant would induce him to dispute.” *Leicester County Farmer*.

Extension of Knowledge.

At his opening lecture at Guy's Hospital, London, in 1813, William Allen made the following remarks:

“The circumstances in which we are placed in the present state of our existence, prove it was the intention of the Supreme Being that we should be actively employed; every thing about us is in motion; important changes are constantly going on, and some of them, by their very nature, are calculated to stimulate mankind to exertion. This change is impressed upon our garments which are continually wearing out—upon the habitations which protect us from the weather, which are constantly requiring repair; it is obvious on the very face of nature, and proclaimed in the succession of seasons; it seems to be a law of our being, that whatever is capable of fixing our attention to useful pursuits—whatever stimulates to the exertion of intellect—whatever gives spring and activity to the powers of the mind, must, if properly directed, conduce to the happiness of man. Surrounded as we are by the comforts and conveniences of civilized life; born in an age wherein the useful arts are carried to a high degree of perfection,—it requires some abstraction of mind, and a certain degree of reflection, to appreciate properly the advantages we enjoy. We are apt to consider the situations in which we find ourselves, as perfectly natural, and have but a faint idea of what we owe to the labours and exertions of those who have gone before us; without their labour and skill, however, we might yet have been obliged to clothe ourselves in the skins of beasts,—to seek refuge from the vicissitudes of the weather in the caves of the earth, and feed upon any digestible substance that might be thrown in our way.

The influence of knowledge upon the hu-

man mind is prodigious. A reference to the page of history will not only show the gradual advances which have been made from rude beginnings to the present improved state of society, but it will strongly inculcate the important lesson, that the happiness of our species is intimately connected with the diffusion of knowledge. Where do we behold cruelty in its most terrific form, but in the uninstructed and neglected part of the community? by whom are our jails principally inhabited, but by the ignorant!—by those to whom society has failed in its duty. In the higher ranks of men, ignorance assumes not unfrequently the shape of bigotry, and manifests itself in deep-rooted prejudice: whenever you see a man more than ordinarily censorious of others, indisposed to make allowance for the circumstances in which they may have been placed, positive and uncharitable in his opinions, whatever may be his rank in life, be assured that he is lamentably ignorant.

Knowledge, properly understood and applied, sheds a benevolent influence over the mind of the possessor; and when we consider that it tends to increase our powers of usefulness, and thereby to add to our own happiness and that of others, we shall feel it almost a duty to make such an arrangement of our time, as to devote regularly a portion of it to the improvement of our minds.

Of all the varied branches of knowledge, those relating to material objects are most important. In former ages the powers of the human mind were exhausted in useless metaphysical disquisitions concerning essence and substance, and ethereal forms,—things which it was impossible to comprehend or apply to any good purpose. To our illustrious countrymen, however, Bacon, Locke, Newton, Boyle and Hook, we are indebted for a more rational system of philosophy; rejecting idle speculations, they directed their attention to watch the processes of nature, and to attempt to discover some of the laws by which her operations are governed; they built upon facts and experiments, and the progress since made in every department of science, has proved the correctness of their views.

Few are sufficiently aware of the beneficial consequences likely to result from an endeavour to induce a habit of attention even to minute circumstances, and how much misery is produced in the world by those unhappy prejudices, which owe their origin to a careless and superficial view of facts. Men who have not been in the habit of thinking, and carefully investigating the grounds of their opinions, are most of all

liable to be carried away by their passions. The influence of the habit which I now recommend, on the comfort of society, is incalculable; the pleasure arising from the cultivation of our rational powers, would amply repay the efforts necessary for the purpose: indeed, it is only by an accurate examination of things, and reflection upon them, that we learn the comparative value of the different objects presented to our notice, and give to every one that precise degree of attention to which it is, by its nature, entitled."—*Life of William Allen.*

MORAL EFFECTS OF LIGHT.—Dark and sombre dwellings and streets are the well-known resort of the most depraved classes in all cities and towns. This may be said to be a universal law of our social economy, and hence it becomes a matter of some importance to consider whether it would not be advisable, on moral grounds also, to attend with greater care to the construction and improvement of the residences of our labouring population. Darkness produces carelessness and depression of mind, and of the whole nervous system, especially if it be conjoined with idleness, its almost necessary companion. A dark house is generally a dirty house; and it is in dark corners that the poor accumulate filth, which they are too idle to throw out of doors. If such dwellings were exposed to the light of day, a sense of shame would often induce a superior degree of cleanliness; and the cheerfulness of mind which a light house tends to foster would be productive of still greater advantages. Mr. Clay in his Report on Preston, has well said, that "something may be hoped for a people who can feel 'a joy in flowers;'" but the poor can seldom possess even this small advantage in the miserable residences provided for them.—*Liverpool Health of Towns' Advocate.*

CURRENTS may be forced by placing them in any forcing department in the first or second month. They will ripen in the last spring months.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, TWELFTH MONTH, 1846.

In a private letter from T. Wm. Harris, of Cambridge, Mass., dated the 19th ult., after alluding to the

various and extended efforts he has made to perfect for a new edition, his "Treatise on Insects Injurious to Vegetation," he says, "There are still several insects which I am desirous of obtaining; and among them, the *wire-worm* and the beetle that produces it, both of which, according to the late W. Gaylord, Esq., are found in the Middle States. It may be, that they are identical with a species found here, and this it is desirable to ascertain."

We make this note in order to call attention to the matter, and to solicit those whose situation and pursuits give them the power, to lend their aid to this distinguished naturalist, in his highly interesting pursuit.

F. TUCKERLAND's newly invented Threshing Machine was mentioned in our last number, as having been visited by the Editor. Since that time we have seen it in motion, and it certainly made a very favourable impression as to the efficiency of its operations. It threshed with great rapidity, and did the work well. The grains were unbroken. A sheaf of wheat was thrown in the water and then passed under the beaters. It was out in a twinkling, with perhaps every grain separated from the straw.

OF SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoes Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guarano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1846.

tc.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE, A BEAUTIFUL FARM,

Nearly adjoining the city of Annapolis, Maryland, containing 350 acres of land, naturally of good quality, and during the last four years, I have had it highly improved with clover, plaster, ashes, lime, and other manures to the amount of upwards of fifteen hundred dollars. The fences and buildings are all in good repair, and divided into ten departments, including one peach orchard, containing upwards of 1500 trees, in fine health of three summers' growth, and an apple orchard in full bearing. About 150 acres of this land are covered with the best sort of building timber.

I have a good wharf, where a large schooner can lie and receive or deliver produce. This farm is very pleasantly situated, high and dry, and about rolling enough to cast off extra rain water,—also has good spring water in several of the fields. The buildings consist of a good dwelling, nearly new, two brick servant houses, one house for the manager, two large tobacco houses, 30 by 70 feet each, one is used for a barn; stabling, corn, milk, and hen houses. From the above dwelling I can go to the Annapolis market in about fifteen minutes, where we have a tolerably good market for hay, peaches, sweet potatoes, milk and butter. Of milk about \$3000 worth may be sold annually. Freight is cheap to Baltimore, which is an excellent market, with which we have daily intercourse, both by steam and otherwise. But few farms have the same opportunities of doing business to profit, being now in good order to make money, and only on account of advanced age, infirmities, and residing at a distance, am I induced to part with it. It will be sold cheap. Persons desirous of seeing the place, will please call on me, near Baltimore, Md., and I will go and show it.

ROBERT SINCLAIR, Nurseryman.

August 29th.—4t.

FOR SALE, AT D. O. PROUTY'S AGRICULTURAL WAREHOUSE,

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th.—4t.

The quantity of rain which fell in the 11th month, 1846, was nearly eight inches. 7.97 in.
Penn. Hospital, 12th mo. 1st.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.

Successor to George M. Coates.

Sept. 13th, 1846.

PHILADELPHIA

AGRICULTURAL WAREHOUSE,

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW

Horticultural and Agricultural Ware-house,

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Twelfth month 15th, 1846.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	374
THE FARMER'S LAND MEASURER;	374
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	314
HUIST'S ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	624
HANNAM'S Economy of Waste Manures,	25
LIBBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	124

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

GUANO.

TWENTY-FIVE tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by

B. & J. J. ALLEN & CO.,

No. 7 South Wharves, 2nd Oil Store below Market street, Philadelphia.

October 15th, 1845.

12

Pondrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, for seven barrels or more, \$1 75 per barrel, containing four bushels each. Any number of barrels less than seven, \$3 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for wheat.

JOSIAH TATUM.

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TERMS.—One dollar per annum, or five dollars for seven copies—payable in advance.

All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO
AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LUSIGN.

Vol. XI.—No. 6.]

1st mo. (January) 15th, 1847.

(Whole No. 144.)

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

Memorial from Agriculturists.

We find the following in the Twelfth month number of the *Farmers' Library*, "which states that it is in course of circulation through the country. Our friend Skinner is disposed to leave no stone unturned in his indefatigable efforts to serve the interests of the agricultural community. And it were well to bear in mind, that when those interests are served, all others partake of the benefit; for "perfect agriculture is the true foundation of all trade and industry."—En.

Memorial from the Agriculturists of the United States to their respective State Legislatures.

THE undersigned, on behalf of the agricultural interest, to which they belong, beg leave to request your attention to what they feel to be their just, but too long neglected claim on the General Government.

Not wishing to deal in vague generalities, the measure we solicit, is that you would urge our Representatives and Senators in Congress, to use their influence to procure

CAB.—VOL. XI.—No. 6.

an appropriation from the proceeds of the public lands, or from the general treasure, for the use of each State, in proportion to its representation in Congress, to be applied, in each State, expressly to the establishment of a NORMAL SCHOOL, for the instruction and preparation of teachers in agricultural chemistry, mineralogy, vegetable and animal physiology, civil engineering, rural architecture, and practical surveying—in such arts and sciences, in a word, as will enlighten practical agriculture, and render more efficient and profitable the capital and labour employed in it. Teachers thus prepared, would be ready to take charge of minor agricultural schools, in each county in every State of the Union; and thus would the foundation be laid for spreading among the mass of the people a knowledge of those sciences, on the application of which, according to the opinion of the ablest writers of the age, "Agriculture must hereafter depend for all material improvements."

In the name of justice to the landed interest, and in anticipation of objections as to want of means or power, the undersigned would refer to the very large expenditures under all administrations, not only for the establishment of naval and military academies and schools, and the publication of surveys, maps, and journals, without number, of military officers, exploring sea and land, but to the boundless acquisition of foreign territory, by acts of Congress. We may also refer to large and repeated appropriations
(169)

tions, not merely for the establishment of Observatories, and lines of Telegraph, under the control of the General Government, but to an object strictly analogous to the one we seek, to wit, the *annual Agricultural Reports from the Patent-Office*.

All these appropriations of the public money—chiefly, it is true, as connected with the military operations of the Government—have been avowedly for the purpose of collecting and distributing warlike or other information.

These facts and considerations induce your memorialists to hope that Congress will not now refuse to the people a portion of their own money, for the purpose of providing within each State, conformably with its own policy, institutions and courses of industry, schools for the instruction, also, of the *rising generation of planters and farmers* in the principles of that great pursuit which has been well pronounced "the nursing mother of *all the arts*,"—a pursuit upon which Congressional Reports, useful though they be in their way, can yet throw but the partial light of facts and statements promiscuously gathered up, not always well digested, and, after all, distributed or not, according to the individual pleasure and discretion of members of Congress.

For the warlike machinery and purposes of this Republican Government, embracing the objects above referred to, *several hundred millions* of dollars have been expended since our last war with a trans-Atlantic power; and this enormous expenditure has really been collected, in *very large proportion*, from the landed interest, since it is that class which has chiefly consumed the imports on which the revenue has been levied.

Your memorialists are far from repining at the liberal pay, life commissions, certain promotion, pensions, residences, hospitals, schools and academies built, provided, and kept up, at the public expense, for the two military branches of the Government; but they humbly think that the time has arrived when the people, the yeomanry of the country—those by whose toil its solid wealth is dug out of the ground—may inquire why, in what view of the "general welfare," it is that since any amount can be found to promote advancement in the science, and successful practice in the art of war, nothing can be granted for the better instruction of the rising generation of freemen in the science and practice of that great peaceful pursuit which employs, feeds, and pays all others?

Under the most despotic monarchies, men of genius who have conferred signal benefits

on the industrial pursuits of the people, by scientific discoveries and useful inventions, have been lavishly rewarded, and raised to the highest honours. Mechanics, chemists, astronomers, great naturalists, and learned and enterprising men in every walk of civil life, have been there endowed with titles and fortune. If, under such Governments, stars and garters, and badges of power and respect, have stimulated to heroic deeds in fields of battle, so have they been held up as certain prizes to intellectual excellence, and great accomplishments in the arts and employments of peaceful industry. If schools have there been maintained for training youth in the art of war, so have they been maintained for teaching the application of the arts and sciences to all the industrial pursuits of life.

As republican freeholders, then, we would respectfully inquire whether it be becoming or politic for this nation, whose Government rests for security on the popular intelligence, to imitate European Governments *only* in the favour and patronage they confer, with self-preserving instinct, on that executive department of their power upon which *they* lean to protect their existence against the progress of free principles, and the force of public opinion seeking to carry them out?

It would indeed be passing strange, as it seems to your memorialists, that in a Government called free, deriving so chiefly all its resources from the agricultural interest, its powers should be so organized as to preclude the application of any portion of the public treasure to confessedly, and by far, the greatest of all public concerns! We would respectfully forbear from remarking, as it would seem to deserve, on that monstrous perversion and abuse of sovereign authority, in a Government called republican, which should reserve all life tenures, and all pensions, and all enlightenment, for the military, while it renounces the glorious faculty of aiding and rewarding the labours of intellect in the humbler, but so much more useful paths of peaceful, laborious and productive industry!

In behalf, then, not so much of themselves, as of the rising generation of agriculturists, on whom our country and its liberties must mainly depend under all vicissitudes, we call upon you, to whom we have consigned for the time the sovereign authority of the State, to demand from the General Government that something be now, at last, done to *foster Agriculture*, by diffusing that knowledge which is power, no less in the field of labour than of blood. They believe they have a right to expect for this great national purpose, so identical with the general wel-

fare, appropriations bearing some proportion to the amount which the products of agriculture bear to the aggregate wealth of the nation, and to the degree of dependence of the Government itself, and all classes under it, on that class for employment, protection, safety, and support.

Account of an Experiment in Deep Ploughing.

BY JOHN JAFFRAY, DUNDEE, EAST Lothian.

THE experiment was made upon a small field, which is sixty-five feet above the level of the sea. The soil is sandy, resting upon a subsoil of sand and gravel of great depth, and so thoroughly drained by the declivity of the surrounding lands, the want of moisture is its natural effect. There is but little difference between the soil and the stratum on which it rests beyond what culture and manure have made; but, from sinking of gravel, treading of horses, and pressure of the plough, year after year, and age after age, the subsoil had become crusted, hard, and beaten, as a road. In short, from shallow ploughing, there was but little of cultivated earth; and, as on all such soils in dry seasons, the crop was scorched and scanty. With a view to render this field fruitful in any season, it was subsoiled with the Deanston plough, eighteen inches deep, and sown with wheat for crop in 1837. The great vigor and luxuriance of the crop attracted general notice; and it must have yielded an extraordinary increase, if it had not been lodged by wind and rain shortly after the ear appeared. Therefore it gave only thirty-eight bushels of grain to the acre, but three tons of straw, which proved its great strength. To this crop, one of potatoes and two of wheat succeeded; but it is the culture of this field for crop in 1841, and the result, which chiefly constitute this report.

It was all equally dressed with seaware; and four acres of the same quality and description were measured and staked off. Two of these acres were ploughed twelve inches deep, with two horses, and two of them eighteen inches deep, with four horses. These two portions in all other respects, were cultivated and managed exactly alike. They were planted with potatoes of the Don species in the last week of April, eight inches deep, twelve inches asunder, and in drills thirty inches wide, running at right angles to the furrows of the experimental ploughing. The potatoes were planted deeper than usual, therefore the shoots were longer in coming through the ground; but when they did appear, it was with great strength and regularity. They expanded their broad

deep-green leaves, and grew vigorously in the dry sandy soil, in a very severe and long continued drought. It was soon evident that the deepest ploughed portion had the advantage. The stems and branches of its plants were stronger, and they first covered the ground.

The potatoes were lifted in the last week of October, when it was found that the land ploughed twelve inches deep produced fifty-seven bolls per acre, and the land ploughed eighteen inches deep produced sixty-nine bolls per acre, being a difference of twelve bolls per imperial acre, of four cwt. to the boll.

The potatoes from the deep tillage were larger, more of one size, had fewer small ones, and not so many of a green colour as those from the other division.

The quantity on the deep tillage is eighty-seven bolls per Scots acre, which is a good crop for any year; and it will readily be granted that it is far above the average of the district this year, many fields not producing half a crop. But though this is a greater crop for the season, it must have been still greater if the field had been less exposed, as it has no shelter; and three days of very violent wind in the first week of August broke down the plants, which, from their great luxuriance, were then very tender, and checked their growth.

The practical conclusions to be drawn from this experiment are—

First, that deep ploughing increases the produce.

Next, that, as both portions of the land used in the experiment were opened up eighteen inches deep by the subsoil plough for crop in 1837, the full benefit of that operation is not obtained till the earth so loosened is again ploughed up. And the reason is evident; for it is then only that the soil is deepened, by an addition from the subsoil with which it is intermixed, and rendered more fruitful.

Lastly: if deep ploughing increases the produce, it increases also the supply of vegetable manure; and a greater portion of manure, added to improved culture, must produce a progressive increase of fertility and of produce.

CHILDREN.—Speak to a child—any child—in a calm, positive, clear voice, and he will be sure to obey you, if you speak once, and only once.—*Mrs. Sigourney.*

THE Eureka says that the oldest evidence of the application of steam as a power in England, is a patent granted to Thomas Savery in July, 1698.

For the Farmers' Cabinet.

Cultivation of the Peach.

PROBABLY it is not saying too much to assert that the peach flourishes as well, if not better, in this country, than in any other part of the world. And yet the tree is subject to diseases and the ravages of insects, which shorten its life. The peach worm generally attacks the tree near the roots, the first or second year after being taken from the nursery. The usual method of managing is to examine the trees and cut out the worms with a sharp knife; but this is a tedious process, particularly for those who cultivate large orchards of one hundred acres or more.

A better method of managing is to prevent the worm from ever getting at the trees. This is easily accomplished by putting around each tree, when the orchard is planted out, three quarts of fine charcoal dust, and the same quantity of slaked lime. Mix the two articles together, and place in contact with the tree in the form of an anthill. Where wood ashes are more easily obtained, four quarts placed around the tree in the same manner will answer the purpose. Four quarts of poudrette will also answer a like good purpose.

Peach trees are sometimes attacked with a disease called the yellows. Our opinion is, that if trees are propagated from healthy stocks—if kept free from worms, and in all other respects properly cultivated, they will escape the yellows.

If, however, any trees are attacked, the only method of arresting the disease in the orchard, is to dig up by the roots all diseased trees, and burn them at once. One of the greatest faults in the general cultivation of the peach, is that most growers permit the trees to exhaust themselves, by letting all the fruit remain on the trees when one-half, and sometimes two-thirds of the crop should be picked, or shaken, or raked off, when the fruit is about one-quarter grown. The remaining fruit will grow to a larger size—ripen better, and command more money in market, than when the whole crop is suffered to remain on the trees.

An orchard treated as above, will produce good crops for twenty years, instead of only four to seven years, which is the longest period trees will continue in bearing with ordinary culture.

Some of the old varieties of the peach appear to be running out—this, without a doubt, is owing in many cases to propagating from old and unhealthy trees. Fortunately for the lovers of this delicious fruit, many new varieties have been brought out,

which for size, beauty, flavour and productiveness, surpass the best of the old varieties.

The *Milk*, of Maryland, is a larger and finer fruit than the old *Morris White*—the flesh of the former is white to the stone. Crawford's *Early Malacaton*, ripe last of August; Crawford's *Late Malacaton*, ripe last of September; John's *Malacaton*, ripe middle of September; Huston's *Malacaton*, ripe last of September, are all superb fruits that cannot be excelled. Scott's *Nonpareil*, is a similar fruit to the four *Malacaton*'s last mentioned, and is a September variety. Temple's *Late Free*, ripe the middle of October, is the finest late variety within our knowledge. George the Fourth, and La Grange, are also valuable new varieties. Red Rareripe, Yellow Rareripe, Ward's *Late Free*, Smock's *Late Free*, Pool's *Late Free*, Early York, Troth's *Early Red* and *Early Ann*, are among the best old varieties. The above named are all freestones. The following are clingstones, and valuable for ripening late in the season, Lemon Cling, Oldmixon Cling, Late Heath Cling, Rodman's Cling, Tippecanoe, and Algiers Winter.

We state for the information of new beginners, that our old and experienced peach growers always plant out trees in the spring—in no case will they plant in the fall—experience has taught them that trees planted in the fall, do not come into bearing so soon by two or three years, as those planted in the spring, and the trees never do as well.

B. G. BOSWELL,

Nurseryman and Fruit Grower,
No. 320 Pine street, Philadelphia.

The Potatoe Failure—Non-liability of a Tenant to pay Rent.

An important case—*Macdonald v. Wilkie*—came before the Justice of Peace Court at Dundee, on Monday week, which excited considerable interest, upwards of fifty others being contingent on the decision to be given in this one. The principal facts involved in the case are as follows:—Mr. Macdonald is the principal tenant of the Forthill of Balgillo; and he, as well as many other farmers throughout a great portion of Forfarshire—and who joined issue in the trial—has been in the practice of sub-letting detached portions of his farm to parties residing in the neighbourhood, for the purpose of growing potatoe. It seemed that the purchaser ploughed the ground and supplied the manure, and that the sub-tenants afforded the seed, and attended to the cleaning and culture afterwards. In consequence of the failure of the crop, the sub-tenants this year

refused to pay the stipulated rent, which, of course, is much higher than the rent paid by the purser to his landlord. In this form the case came before David Milne, Alexander Balfour, and William Thoms, Esqrs., the presiding Justices, at the instance of Mr. Macdonald, for the purpose of fully trying the question. On the part of the defenders, reference was made to the law on the point as laid down by Erskine, by which it appears "that, though the tenant should have got possession, and sown his arable grounds, the landlord cannot, by the Roman law, claim any part of the rent, if inundation, the calamity of war, the corruption of the air, or the inclemency of the weather by earthquakes, lightning, &c., had brought upon the crop damage *plusquam tolerabile*," and that though it is not exactly defined "what degree of sterility or vastation makes a loss that cannot be borne," it is said to be the common opinion that "the tenant is liable for the rent, if the produce of the crop exceed the expense of the seed and the tillage." To carry out this point, therefore, the defenders led evidence to prove the almost total failure of the crop in question; and the Justices, with reference to the foregoing authority, assuaged all the defenders, with one exception, in which case it appears that the crop had been taken up early, and while in good condition—the defender in this instance pressing his willingness to pay.

—*Kelso Chronicle*.

For the Farmers' Cabinet.

Bucks County Agricultural Exhibition.

A communication appeared in the fourth No. of the Cabinet, page 120, over the signature of J. P., in relation to the Bucks County Agricultural Exhibition, which may require a passing notice.

Although the writer appears to have been well pleased with viewing the "excellent stock, and good show of produce and vegetables" exhibited at Newtown, yet he was not so well pleased with the fact, that the plough for which the diploma was awarded, was a Bucks County plough, and he attempts to cast odium upon the Society through their committee, by asserting that the committee on implements awarded their diploma "before trial." Now I have the best evidence—that of the committee themselves—all of whom were of "the old Bucks County class of husbandmen," for saying that the ploughs were stopped at their request, before the furrows were cleared up, that they might view the ground before the spectators ran over it, and that they were unanimously of the opinion that the diploma plough was the

best plough, and that the decision was made with special reference to the work done.

Notwithstanding Prouty's plough is so highly recommended for turning under the stubble, yet much anxiety was manifested to attach a chain to it, and complaint was made of the decision of the committee on ploughing, that it should work without one, as the others did. This certainly furnished evidence of the existence of doubts whether that plough could successfully compete in this respect. It might here be added, that for turning under a heavy coat of vegetable matter without choking, the diploma plough stands unrivalled by the Prouty plough, the peculiar construction of its side cutter giving it advantages in this respect which that plough does not possess.

J. P. remarks that the committee "might have added the Prouty plough, after carrying a furrow two and a half inches deeper and two inches wider, finished her task, leaving the Wiggins plough five furrows to turn;" but it appears they were men who did not choose to make such an assertion. The space ploughed has been measured and the furrows counted. The Prouty plough ploughed 22 feet 6 inches, turning down the sod at 22 furrows; the Wiggins plough ploughed 23 feet 6 inches, turning down the sod at 24 furrows, making a difference of about one-half inch, instead of two inches, in the width of furrow. For this fact I refer to Edward Leedom, who owns the soil ploughed, and assisted in measuring it. The depth ploughed cannot now be accurately measured, but I have conversed with many individuals upon the subject, some of whom paid particular attention to it at the time, and none of them believe that the Prouty plough ploughed more than one inch deeper, and some of them not near that much. The time of ploughing depends very much upon the speed of the team, and the committee did not limit the ploughmen as to time.

That the Wiggins diploma plough is not entirely destitute of merit, appears from the fact, that the second premium was awarded to it at the exhibition of the Philadelphia Agricultural Society, where Prouty had three ploughs entered; and I believe the plough and those who entered it, were entirely unknown before the exhibition to every member of that committee; therefore I think the premium in this case was not awarded "before trial."

In conclusion, if the Prouty and Mearns plough "performed the best work that J. P. had witnessed the present season," and "it called forth the admiration of the congregated mass of spectators, without a dissent-

ing voice," why he should have returned with his ploughs again to Newtown, complaining that he was not satisfied, but wished them tried again, I cannot conjecture. I believe there are still dissenting voices after his second trial. As a member of the Bucks County Agricultural Society, I extend to J. P. a cordial invitation to meet with us again at Newtown at our next exhibition, hoping that the committee on ploughing will correct the error into which they fell, that of not arranging the list of ploughs in their report according to the order in which they ploughed in the field.

A BUCKS COUNTY FARMER.

Twelfth mo. 17th, 1846.

Good Domesticity.

WE have observed that persons much addicted to complaining of servants, and to dismissing them for real or imaginary offences, seldom find their own condition improved by the change. On the part of employers, the habit of fault-finding too often but aggravates the evils of neglect and disobedience on the part of domestics, and those will seldom be pleased, who show no disposition to be pleased. It is human nature to be seldom amiable when unhappy. There are but few ungenerous, obdurate persons, who will not be more moved and swayed by a pleasant smile and ten words of kindness and encouragement, than by long lectures on the duty of servants, or whole volleys of censure. It is ever bad policy, as it is unjust, to have a quick eye to faults and to be blind to good actions. And in families as in States, those govern best who govern little, and rather by invisible influences and the contrivances and circumlocutions of discretion and charity, than by unmasked authority and force. In fine, in the domestic circle affection must be law, and domestics must come within the circle of a deep and generous regard. Who can estimate the value of a long tried and faithful servant? Nearly a century ago Lady Montague wrote:

"I would not every day tell my footman, if I kept any, that his whole fraternity were a pack of scoundrels, that lying and stealing were inseparable qualities from their cloth, that I should think myself very happy in them if they confine themselves to innocent lies, and would only steal candles' ends; on the contrary, I would say in their presence that birth and money were accidents of fortune, that no man was to be seriously despised for wanting them; that an honest and faithful servant was a character of more value than an insolent and corrupt lord; that the real distinction between man and man

lay in his integrity, which in one shape or another generally met with its reward in the world, and could not fail of giving the highest pleasure, by consciousness of virtue, which every man feels that is so happy as to possess it."—*Journal of Commerce.*

For the Farmers' Cabinet.

Large Farm in Maryland.

TO THE EDITOR.—The intelligent and wealthy citizens of our country have it in their power to do much good, particularly those who have travelled in Europe, and have closely observed the manners and habits of the people, and their mode of living and conducting business, whether in agriculture, commerce, or manufactures. When such individuals, after having availed themselves of the advantages of their position, fix their minds on the accomplishment of any great object for the benefit of others, their good judgment, perseverance, and ample means, will generally bear them out in such an undertaking.

The truth of the above remarks were verified, when on a visit a few weeks since, in company with a friend, to the extensive and highly cultivated farm of George Patterson, Esq., near Sykesville, Carroll county, Md. We were indeed astonished at the magnitude of his operations, and the apparent evidences of his success. The improvements made on his farm of near 1800 acres,—1200 of which are under cultivation—in the space of a few years, are truly wonderful. He informed us that it was destitute of grass of any description, and some parts covered with moss, at the time he commenced farming. It is now producing heavy crops of wheat, corn, oats, hay, &c., &c. Many of the fields are laid down permanently in grass for grazing purposes, and have the appearance of the fine lands in parts of Chester county, Pa. This wonderful change in the fertility of the soil, has been brought about principally by the use of lime. The practice of Mr. Patterson, as he informed us, was to spread on the surface about 100 bushels per acre, which after lying from three to five years, was ploughed under, and the ground planted with corn, and after undergoing a course of farming, is sowed liberally with grass seeds.

Many of his fields have had a second dressing of lime, equal to, or greater than the first, making upwards of 200 bushels of lime to the acre. On such, the natural grasses are forming a good sward of the best quality of grass for grazing.

The farm is undulating and well watered. The low grounds are neatly and perfectly

underdrained. Handsome belts of woodland are left in different places for protection from storms, as also for ornament, forming a picturesque and beautiful sight. Mr. Patterson informed us that he had applied nearly one hundred and eighty thousand bushels of lime; and with the large stock that he is now enabled to keep, he makes in addition, a great quantity of manure, which he uses principally in top-dressing, considering that the best mode of applying it. His fields are necessarily large, but well fenced. On the farm are upwards of 18,000 panells of post-and-rail fence, all appearing in good condition. In addition to the main farm buildings, there are a number of hay-houses on different parts of the estate, for greater convenience of storing hay, &c., and for feeding.

The principal roads over the farm are turnpiked, for the purpose of enabling the teams to do more hauling during the wet season. Gates neatly hung, are used in place of bars, affording a great convenience and saving of time.

The regular stock of cattle kept on the farm are of the pure Devon blood, chiefly descended from his own importations, and obtained from that celebrated farmer and breeder, Mr. Bloomfield, of Norfolk, England. A more magnificent herd could not perhaps be found in any country at this time. I believe they number about 60 head. We examined a young bull of beautiful form, possessing all the fine points of his race—he had just arrived from England. Mr. Patterson informed us that it was his practice to import a young bull about every three years, in order to keep up a steady improvement in his herd, thereby evincing much skill as a breeder, and great liberality and spirit as a citizen.

In addition to the above, a large number of cattle are purchased annually and fattened for the markets. We were shown several large flocks of fine sheep of mixed blood, and also some superior Southdowns. Also a large number of swine of the Berkshire breed, which were preferred to any other kind, on account of the superiority of their meat for the table.

We saw on the farm in different lots, a number of fine blooded brood mares and their colts, and some crosses with a fine Northern bred horse, producing highly valuable and splendid road horses.

The skilful management displayed by the spirited owner of this noble estate, was highly gratifying, and caused my friend and myself to wish that hundreds more of our countrymen possessing talents and fortune, were engaged in the same honourable and useful pursuit.

After having spent some hours with Mr. Patterson in riding over the estate, and partaking of his kind hospitality, we left to meet the cars for Baltimore, highly gratified with our visit.

A. C.

Philadelphia, Dec. 22nd, 1846.

Milk for the People.

THERE exist on Long Island, near Brooklyn, several *manufactories* of milk—the process of which should be known. One of these *dairies* covers a space of 600 feet front by 300 deep, carefully fenced in, so as to be as private as possible—the business of the people being to *drink* the milk, not to know how it is *made*—in which enclosure 400 cows are kept the whole year round. These cows are fed on the refuse slop of the whiskey distilleries, and it is given to them *warm*. Each barrel costs six cents, but being adulterated with water and cheap feed, brings the price still less. Such is the fondness of the cows for this vile compound, that after having fed upon it for a week or more, their appetites become so depraved that they will take no other food. The result is their milk-producing organs are stimulated to a wonderful degree; they yield enormously, but soon become diseased; their gums ulcerate, their teeth drop out, and their breath becomes fetid. Though thus diseased, they do not fall away in flesh, but on the contrary puff up and bloat to an appearance of great fatness; their joints become stiff, so that they cannot lie down, and rarely or never come out alive. Bad as this is, the milk is afterward mixed with molasses, water and whiting, and then sold to the people of New York for pure milk! Any one may observe the thirty-six vans that carry it around every morning. It is of course very injurious to children, who use it in much greater quantities than adults. Some idea may be formed of the profit made by computing one barrel of slop to a cow, costing sixpence, and the milk produced being eighty cents!—*New York Paper*.

ECONOMY IN COOKING CRANBERRIES.—To each quart of berries, very shortly after the cooking of them is commenced, add a teaspoonful of sal. aratus. This will so neutralize the acid which they contain, as to make it necessary to use only one-fourth part as much sugar as would have been requisite, had they been cooked without using sal. aratus.

LANDS should be well drained before they are manured.

From Downing's Horticulturist.

To Renovate an "Outcast."

It is very rarely that experiments are properly made or accurately reported. The following one, on a subject highly interesting to every cultivator of the *Pear tree* on the sea-board, appears to us highly satisfactory in both respects.

Such of our readers as are familiar with the Appendix to our work on Fruits, are well aware that we do not believe in the natural "running out" of varieties. In other words, we are confident that wherever a variety, once productive and excellent in a certain soil, fails, it is for the want of certain conditions necessary to its success. Either it has exhausted the soil of those constituents necessary to health and productiveness; or if the tree is a young one, and immediately shows signs of decay, it is evident that it has been propagated from an unhealthy and diseased stock.

The hints we gave our correspondent below, were based on some chemical notions, which were only vague theory then, but which subsequent observations have given us greater confidence in. The renovating substances that we recommended in this case, were intended to be adapted to the peculiarities of the soil of J. B. W.; but all the alteration which we are able, even now, to suggest for other sites, would be to substitute air-slaked lime for charcoal, in heavier soils, that are naturally deficient in the former substance.

The salts of iron, and especially sulphate of iron, have a specific action upon the disease which attacks, in unfavourable soil or climate, the epidermis of the pear and other plants, both on the leaf and fruit. Observations of the occasional results of black-smith's cinders, applied to this tree, in various parts of the country, first drew our attention to this fact. We have lately seen a paper, read before the Academy of Sciences at Paris, by M. Boussingault, bearing directly on the diseases of plants as affected by the salts of iron, which confirm and extend our own crude views on this subject. The substance of this essay we shall, at some convenient moment, lay before our readers.

In the mean time, we beg the attention of our readers to the plain and simple mode adopted in the experiment below. If, as we are convinced, a tree, which some have condemned as an "outcast" from pomological society, may be renovated so easily as this, it is quite worth while to "spare" it. The quantities of the substances added to the soil to renovate it, were, it should be

remembered, applied to a tree nearly *full grown*. One-half, one-fourth, or less, should, of course, be used to trees of correspondingly less size and age.

A hint may be taken from this treatment of old trees, for the better culture of young ones on soil naturally unfavourable.—Ed.

To the Editor of the Horticulturist.

You will remember the conversation we had together three years ago, about the apparently worn out condition of my Virgalieu or St. Michael pear trees. I spoke of them then, in the language of Knight and Kenrick, as "degenerate outcasts." Though they had once borne me excellent crops of fruit, which I have never seen surpassed, yet for several years they had only produced cracked, blighted, miserable fruit—indeed such as was absolutely worthless.

I remarked to you, that I considered the variety worn out, and good for nothing in my neighbourhood, and that I intended to cut down my trees, which were large and fine, and ought to yield every year several bushels.

My situation is a sheltered one in Westchester county; and after some inquiries about my soil, which is a light, though excellent, sandy loam, you told me that you believed the trees had exhausted the proper elements from the soil; that in consequence the fruit failed, and recommended me, instead of cutting them down, to renovate them.

Struck with the force of your reasoning at the time, which I have not leisure now to repeat to your readers, I determined to make a trial with two trees. I did so in the fall of 1843. I have now the pleasure of repeating in writing, what I told you verbally, that I have now had two crops of beautiful fair fruit, as excellent as the finest that grew upon my soil twenty years ago.

As many persons about New York and Long Island, have trees of the Doyenné or Virgalieu pear in the same degenerate condition in which mine were, I comply with your request to give a simple statement of my proceeding with my trees, premising in the outset, that it is entirely based upon the hints I received from you.

In the month of October, 1843, I took in hand two large and thrifty Virgalieu pear trees, about twenty or thirty feet in height. I first scraped off all the rough outer coat of bark, and coated the trunk of the tree over with soft soap, put on with a paint brush. I next cut out about one-third of all the poorest branches, and shortened the head of the tree one-third, by "heading back" the principal limbs, covering the wounds after

paring them, with the "shellac solution,"—the best thing I have ever tried—recommended on page 32, of the "Fruits and Fruit Trees of America."

I then dug a trench four feet wide around the whole ball of roots, very much as if I were going to transplant it. I left a ball of roots untouched, about six feet in diameter. The roots—all the roots, large or small—that extended beyond this ball, I cut off; and I should judge that I cut off about one-third of the roots; or, as you advised me, about an equal proportion to the branches reduced.

The trench itself, which was four feet wide, I dug twenty inches deep; and carted away all the old soil from it to another part of my garden. I next carted in an equal quantity of soil from a field of good pasture, where the sod had not been broken up for several years. I drew this earth, composed pretty largely of the sod itself, and filled the trench around both trees.

To each tree I then applied the following substances, viz., two bushels of refuse or scorion from a blacksmith's forge, two bushels of charcoal pretty well broken, and two pounds of potash well pulverized. These substances I had on the spot, and mingled them with the fresh soil as it was put in the trench. After the trench was full of soil containing these stimulants, I had the whole of its contents thoroughly intermixed, by turning them over and over again with the spade. This is the whole of the process. Now a word about the results.

The first summer after the trees had been operated upon—that of 1844—I was surprised and delighted with the luxuriance and vigor of the new growth. It was very healthy, and had the appearance of that of a very fine young tree. Suffice it to say, the tree had formed a new and handsome head.

Next season, 1845, it blossomed moderately. But almost every blossom set, and gave me a fruit. Every fruit, to my great joy and satisfaction, was large, fair and smooth; the growth was clean and healthy, and the leaves dark green in colour.

This year I have had a fine crop: two bushels from one tree, four bushels from the other. They were superb fruit—genuine, old-fashioned Virgalieus; and I cannot doubt that my trees will continue to bear such for many years.

I need not say, that I and many others are convinced by this experiment, that the pear tree, of many sorts in my neighbourhood, have failed from a want of proper sustenance in the soil. Whether the recipe you gave me, may be improved upon or not,

I cannot say; but I can say, that, so far, it has answered perfectly; and it is my belief that every old and enfeebled pear tree that bears cracked fruit, may be restored to good health and a fine bearing condition, by following the same rules. J. B. W.

For the Farmers' Cabinet.

Potatoc Disease.

A GREAT deal has been said about the disease of the potatoe, and many have been the conjectures concerning the cause, and various the remedies proposed, all of which prove abortive at times, owing to the different circumstances under which the remedies are applied.

If we knew exactly the cause, it might not always be in our power to apply the remedy, because the season, over which we have no control, influences the potatoe to a great extent. In the observations that I have been able to make, it appears that the disease is produced by one main cause, and various contingencies may induce that cause. The grand cause of which I speak, seems to be the rupture of the sap vessels. The many things that contribute to bring this about, are rich soil, heat, moisture, dark colour in the soil, and anything else that aids the growth of the plant, especially if that growth cannot be kept uniform; for it may be after all, sudden expansions and contractions that cause the rupture of the vessels.

Well does *Chemico* say, that large heavy tops imbibe certain elements destructive to the potatoe. It must have been observed by all, that low situations are the least calculated to produce sound potatoes, owing to the great variety of temperature; the valleys being warmer than the hills when the sun shines, but colder at night.

Have potatoes ever rotted that were grown on high ground, thin light coloured soil, in a cool dry season? if they have when properly taken care of, I will give the question up. In the spring of 1845, I planted a small lot of potatoes very early; in a few days they were up and looked well;—a frost killed them to the ground—they grew again—were cut down—and a third time were cut down by frost. By this time vitality was nearly exhausted, and the next growth was very weak and small, not half the usual size, and they continued dwarfish all the season; the produce was only tolerable, but there was not the least symptom of disease about the potatoes; though most of the circumstances by which they were surrounded were unfavourable. Any ingredient that tends to retard decomposition in the soil, would, no

doubt, secure the potatoe against the rot in a great measure.

M. T. JOHNSON.

Short Creek, Ohio.

Ploughing Match.

A PLOUGHING MATCH took place in Montgomery, Orange county, on the 28th of October, at which \$50, a sum which had been contributed for the occasion, was awarded in premiums. A correspondent who was present at the trial, furnishes us with the following account:

The day was fine and the attendance large. The competitors numbered sixteen; the ground was very smooth and in excellent order, and some of the work was most admirably done. Capt. Robinson, of Newburgh, was here with a highly finished plough of Minor & Horton's, No. 22. His team—horses—were well trained to the work, and the ploughman understood his business. He ploughed his land, one-quarter acre, in thirty-four minutes, and in a style that no connoisseur of ploughing could find fault with. From beginning until the last, each and every furrow was as straight as a drawn line, and turned handsomely over. Our friend, Capt. R., takes great interest in ploughing, and offers to make a large bet at considerable odds, that he can beat any one in the county,—the judges to come from a distance. John Wait held a plough that was got up in beautiful style by Minor & Horton,—No. 21,—for the occasion. The team was horses, a pair of poor, jaded hacks; but the plough was of such light draft that it required but little exertion for the team, and scarcely an effort for Mr. W. to hold it, so level and even did it run. The furrow-slice was not as wide as Capt. R.'s, and was cut and turned with the utmost neatness and precision—not the least shadow of any deviation from a straight line could be perceived. There was a plough from the shop of Speer & Wilson, Newburgh, held by Edward Wait. This plough, but little known, even in this county, made excellent work, and by many spectators was thought to be equal to any in the field. There were some four or five others that made very good work; and all the competitors ploughed their one-fourth acre within the hour.

Everything passed off satisfactorily until the report of the judges was read, when much disapprobation was shown; not so much by the competitors as by the spectators. The judges were selected in the morning, just before the ploughing began, and are generally good practical farmers and well-meaning men; but their views of

what constitutes good ploughing, are sadly at variance with what we have been learning through the columns of the Cultivator, and other works on agriculture. We have been taught that good ploughing consists in turning a straight furrow, with great exactness of width and depth, either flat, or slightly lapped. But our friends, the judges, at the grand match, would have us believe this is all wrong; that the right ploughing is that which leaves the furrow on the edge, or in as rough a state as possible. They say that this is the best way "to plough for a crop." Now, if this is so, if the rough, broken furrow is the best ploughing, we shall have to discard the so-called improved ploughs, and return to the old-fashioned "hog-plough;" and as to having ploughing matches, they would be a great farce; for who wants to witness a thing where neither skill nor judgment is called into exercise.—*Cultivator.*

For the Farmers' Cabinet.

FRUIT TREES.—One of the greatest drawbacks with which fruit raisers have to contend, is the late frosts in the spring; against which there appears to be no complete remedy. But in order to have as great security as possible, we should plant our trees on the most elevated portions of land we have; for cold, like water, seeks the lowest places. If any one wants a familiar illustration, let him hang a kettle of water over a fire sufficient to heat it, and thrust his hand to the bottom, he will soon discover the philosophy of it.

Near large water courses fruit is frequently preserved by the fog, which rises in consequence of the great difference between the temperature of the water and the atmosphere.

M. T. J.

For the Farmers' Cabinet.

WEEVIL.—I spent the year 1830 in Charles City county, Va., and there for the first time became acquainted with the destructive effects of the weevil, to avoid which the inhabitants threshed out their wheat—or trod it out with horses—and let it remain in the chaff until it was needed for use—it was got out very soon after harvest. The corn was permitted to stand in the field until the stem connecting the ear and stalk was completely dry, then housed with the husk on, and kept so till needed for use; this course seemed to afford protection against the weevil.

M. T. J.

For the Farmers' Cabinet.

A Method for Destroying Weevils, Moths and other insects injurious to Wheat.

MR. EDITOR,—Having read in your November Number your article on insects destroying corn and wheat, and Dr. Harris's letter on the same subject; it brought to my mind an article which I had read in the *Annales de Roville*, an excellent book from the pen of the late Mathieu de Dombasle. Although, in my opinion, it is useful to us farmers to be able to identify the enemy, still we are not much benefited, unless furnished with a means of destroying him. I have therefore translated and herewith send you the abovementioned article. If you think it may be of any use, you may insert the whole, or part of it in your paper. B.

Dec. 12th, 1846.

"A multitude of means for destroying insects that devour wheat in granaries, have been suggested at different times; but it must be acknowledged that we are still in want of an easy and economical process, which should fulfil with certainty the intended object, without presenting objections of a nature precluding its constant and habitual use. I have some hope of these requisites being found united in the method I am going to describe, which has been communicated to me by an enlightened and trustworthy farmer who lives in my neighbourhood, and who has been completely successful in its application.

"The idea must have occurred frequently of applying sulphurous acid gas—the vapour which escapes from burning brimstone—to the destruction of insects injurious to grain; we know, indeed, with what promptitude this gas occasions the death of all insects exposed to it: the only difficulty might be in finding a simple and easy way of thoroughly penetrating with this gas the mass of infested grain. Should there be merely brimstone burned in the room where the grain is stored, it is probable that only the surface of the heap would be penetrated at a very inconsiderable depth; it would besides require the production of an enormous quantity of gas, as the whole contents of the granary must be filled with it, to obtain even such an incomplete effect. The above mentioned farmer has contrived an ingenious way of applying the gas, which I think will answer every purpose with ease and economy. He proceeds as follows:—he makes use of two empty casks, containing each two or three *hectolitres*,* which are

placed on two joists ten or twelve feet long, laid on the floor as they are usually disposed in a wine cellar. This apparatus should be placed in the granary so as to have sufficient space to circulate all round. The casks have an opening a little larger than a common bung-hole. Through this opening the cask is filled with sulphurous gas, by burning a brimstone match, in the same way as coopers do for wine casks.† The wheat is then by means of a funnel poured into the cask until completely full, and it takes the place of the gas. While the match is burning in one cask, the other is filled with grain and being rolled to the extremity of the joists, which ought to be raised one foot above the floor; the wheat is poured out on the floor, when it is raked in a heap to one side. Two men working in this way, may, in a few hours, saturate with sulphurous gas a considerable quantity of grain; for this operation is about as speedy as that of measuring wheat.

"It is easily understood that, in this process the grains of wheat separating from each other when falling through an atmosphere of sulphurous gas, are impregnated with it all over, and that it is impossible for one single grain in the whole not to be reached by it. The air which fills the interstices between the grains is so impregnated with this gas, that no insect can possibly live many seconds in it.

"This method seems to me to insure the destruction of all insects that may be contained in wheat, whether they are in the state of larva or in the state of perfect insect; but I am not as certain that the eggs shall lose the faculty of hatching. This question will demand new researches. At any rate, admitting that the eggs might withstand the action of the gas, the performance of this process is so easy and requires so little expense, that even if it had to be repeated when new insects should have hatched, the inconvenience would be trifling; and the evil would be cut in the root by destroying at once a whole generation, as no new eggs could be produced.

"To take off the smell that the grain might have contracted by this operation, it will be sufficient to stir two or three times in the space of a few days, the heap of sulphurated wheat, acid sulphurous gas being eminently volatile; and the farmer who

† This operation is performed by fastening the match at the end of a wire which is introduced at the bung-hole. The match must be placed as low as may be without danger of setting fire to the cask. The floor of granaries in France are generally laid with bricks. On board floors some precautions should be used.

* An hectolitre is equal to 22 gallons English measure.

practised it assured me, that no taste or odor is preserved in the flour or bread proceeding from that wheat.

"Some precautions ought to be observed in using this process, in order that the labourers should not be suffocated by the gas emitted in the granary. The latter should be well aired by two large openings situated at opposite sides; and the operation should be performed when the wind blows hard enough to create a strong draught. The person who pours the grain in the cask being the most liable to be incommoded by the gas which is displaced, must always put himself to the windward side of the cask.

"For the use of large establishments an apparatus might be easily contrived, by means of which the operation could be performed in a continuous manner, by introducing a stream of sulphurous gas in a vertical tube made of four boards, through which the grain would be sent from the upper to the lower story; but for the use of a farmer, or of any other person not having a very large quantity of grain to be operated upon, I think the use of casks will be the most commodious application of this method.

"I think it probable that the germinative faculty shall not be affected in the grain by the application of sulphurous gas; but it may be interesting to inquire whether this application would not be more efficacious against the propagation of smut, than the other methods hitherto employed. If it be indeed true, as is generally believed, that the action of lime and of sulphate of copper destroys the seminiform buds of smut, we may anticipate the same and a more energetic effect from acid sulphurous gas; and the application of this process would be certainly the easiest and the least expensive of all those, that have been hitherto suggested to answer the purpose."

For the Farmers' Cabinet.

Observations on the Potatoe Disease.

MR. EDITOR,—You are aware that many persons believe that the potatoe disease is caused by wet weather. This is more particularly the case in Europe. There, the wet weather that has preceded and attended the disease, has been, so far, very constant. I have before me a paper giving the most distressing accounts of the disease in Ireland, in which it is stated that about the commencement of August, there were a few very foggy nights, and that during this time the potatoes became attacked with the disease, and in less than a week, the fields

which at that season should present a vivid green, looked as black and as withered as if the month was October, not August. This fact, with many others of a like nature, induce them to think that the fog and wet weather are causes of the disease.

I have mentioned in one of my communications that heat and moisture are necessary for decay. In the early part of the month of August there is always sufficient heat for decay, and the only remaining ingredient, moisture, being furnished by the fog, we should not at all be astonished at the rapid progress of the disease, and that the fields which had looked so beautiful, should so soon change and put on the livery of death. The decay of other vegetation, and other causes generated carbonic acid, which killed the potatoe tops; these rotted and increased the supply of carbonic acid. The potatoes themselves absorbed the carbonic acid, and they, too, began to rot; and unless the heat and dampness were decreased, there would hardly a potatoe be seen at the commencement of October.

Decomposition, however, may progress without moisture, but in such cases it requires more heat. Fire will decompose wood and other vegetable matter, even when very little moisture be present; in fact, the less moisture there is present, the more rapidly the decomposition progresses. This decomposition generates carbonic acid, as in the slower processes. But decomposition will progress very fast with much less heat, provided there be moisture present. The hydrogen of the water seems to aid the decay. Thus, when the water is sufficiently abundant to supply the full quantity of hydrogen that can be used by the decaying vegetable, even if the heat be not very great, the work of decay progresses very rapidly, generating carbonic acid, and dis-easing and destroying the potatoes. Hence the reason is obvious why the potatoes decayed so rapidly in Ireland at the time of the fog.

Had the potatoes been supplied with fresh and strong alkaline substances, they would have been enabled to absorb all the carbonic acid, and appropriate it to the formation of starch, and thus escaped death and decay. But being starved out of this substance, which enters largely into their formation, they were weakly, and where they were thus exposed, they could not do anything else than yield to the powerful influence of the disease. Thus the cause which should have been the farmers' friend, and increased his crop, has, in consequence of his want of knowledge of its nature, been to him a most dreadful and unsparing enemy. May

intelligence progress, and may our sufferings from this cause soon come to an end.

CHEMICO.

Cactus.—The Cactus tribe, as such of our readers as are familiar with Mexican products are aware, is not a family of plants merely curious to the botanist or plant collector. On one of the species, *C. cochinitifera*, the Cochineal insect feeds, that insect which produces the splendid scarlet dye, so well known in commerce. Mexico has the entire monopoly of this product, and the fertile district of Oaxaca is that in which it is chiefly cultivated. Some idea of the value of this little red insect, apparently so insignificant, may be obtained, when we mention that the annual export of it now amounts to above one million of dollars, and according to Humboldt, two millions dollars worth of it have been exported in a single year.—*Horticulturist*.

EARLE'S PLANTING PLOUGH.—A. B. Earle, of Broome county, New York, has invented a planting plough, of interest to those who have seeds to plant. It has a pretty contrivance by which corn, pumpkin seeds, and some kinds of manure may be at one time deposited in the same hill, or only one may be used, at the option of the user. The rows or hills will be at equal distances one from the other, and may be regulated to suit occasion. The machine may be made so as to plant several rows at the same time, if drawn by a horse. The single machine, however, may be urged forward by a man, as he would force a common wheelbarrow, and in that way he will plant, that is, open a drill, deposit one or more kinds of seeds, any given number in a hill, as fast as a man can walk. The machine can be made and sold for \$20. Patent pending.—*Eureka*.

HOW TO JUDGE CATTLE.—In all domestic animals, the skin, or hide, forms one of the best means by which to estimate their fattening properties. In the handling of oxen, if the hide be found soft and silky to touch, it affords a proof of tendency to take meat. A beast having a perfect touch will have a thick loose skin, floating, as it were, on a layer of soft fat, yielding to the slightest pressure, and springing back towards the finger like a piece of soft leather. Such a skin will be usually covered with an abundance of soft, glossy hair, feeling like a bed of mossy skin. But a thick set, hard, short hair, always handles hard, and indicates a hard feeder.

AGRICULTURAL STATISTICS OF N. YORK.—The following statistics of agriculture are furnished by the Marshals employed to take the census of 1845:

Acres of improved land in the State,	11,707,276
Acres of barley under cultivation,	192,503
Bushels of barley raised,	3,103,704
Acres of peas under cultivation,	117,379
Bushels of peas raised,	1,761,508
Acres of rye sown,	317,090
Bushels of rye harvested,	2,966,322
Acres of oats sown,	1,026,915
Bushels of oats harvested,	26,323,051
Acres of beans under cultivation,	16,231
Bushels of beans raised,	162,167
Acres of buckwheat under cultivation,	255,495
Bushels of buckwheat raised,	3,634,679
Acres of turnips under cultivation,	15,322
Bushels of turnips raised,	1,350,332
Acres of potatoes under cultivation,	255,762
Bushels of potatoes raised,	23,653,418
Acres of flax under cultivation,	46,069
Pounds of flax raised,	2,897,062
Acres of wheat sown,	1,013,655
“ wheat harvested,	956,233
Bushels of wheat raised,	13,391,770
Acres of corn sown,	595,134
Bushels of corn harvested,	14,722,114

[*American Agriculturist*.

LIME.—Lime, commonly called calcareous earth, is never found naturally in a pure state, but in combination with the acids—chiefly with the carbonic, for which it has so strong an affinity that it attracts it from the atmosphere. The burning of limestone is undertaken for no other purpose than to expel by heat this gas, and reduce the base to a caustic powder, in which state it has a strong tendency to absorb first moisture, and then the carbonic acid of which it had been deprived. Lime blends the qualities of clay and sand, occupying a middle place between the two. In its caustic state it is a powerful promoter of putrefaction, or decomposer of animal and vegetable matter, to which circumstance is owing, to a certain extent, its efficacy as a manure. Lime also helps to fix the carbonic acid which is generated by the fermentation of putrescent manures in the soil, or which floats in the air on the surface of the earth, and it freely imparts this gas, in union with water, for the nourishment of plants. Lime is therefore an exceedingly valuable ingredient to the farmer; and, accordingly, wherever agriculture is carried on with spirit, it is eagerly sought after, though it sometimes bears a very high price.—*Chambers's Information, &c.*

Destroying the Grub and Wire-worm.

In a recent conversation with an intelligent farmer of Cayuga county, N. Y., he described the method by which he saved his corn crop from the destruction of the wire-worm and grub. The former of these depredators had appeared in prodigious numbers—something less than a bushel per square rod of land, and their ravages were great. He ascertained by observation that they did not descend deep into the soil at the usual time of ploughing sward land for corn, but continued mostly among the roots of the grass. His object, therefore, was to bury them alive. This he accomplished by turning over the sod with a powerful team, to a depth of at least eight inches, the soil being rather heavy. The surface was then pressed down evenly and firmly with a heavy roller. By this process several inches of compact soil lay above the region of the wire-worms, and as a consequence, whenever they attempted to pass upwards to the surface, they met with too formidable a resistance to penetrate. Hence, they continued with the grass below, and perished with its decay. Whether this be the true explanation or not, one thing was certain,—that where the corn was formerly almost wholly destroyed, it is now full and even in the rows, without the usual numerous vacant spaces over the field, always existing under the old practice.

By a similar process of observation, he was enabled to destroy the grubs. He discovered that these depredators, instead of remaining at the surface, like the wire-worm, descend deeply, and hence that deep ploughing brings nearly all of them to the surface. Hence by the use of a heavy roller, many of them were crushed, and the remainder immovably compressed in the solid earth, till a fine toothed harrow passing over the surface, tore out and destroyed them. The utility of this practice, like that of the former, has been amply proved by successful experiment.

Another practice of the same farmer, though not new, is worthy of notice. He has been enabled to keep his flock of sheep of the very finest animals only, by always doing his own picking for sales, instead of leaving this to the purchaser, as is too frequently the case. Or, at any rate, no sheep buyer is permitted to select from his flock, unless he is willing to pay fifteen or twenty dollars per head, which, of course, he will not do. A perseverance in this course for a long series of years has so improved his sheep, that though originally nothing uncommon, they will now compare creditably

with many of the very finest in market.—*Cultivator.*

For the Farmers' Cabinet.

Culture of the Grape.

For many years we have thought the cultivation of the grape, both for table use and the manufacture of wine, might and ought to be increased an hundred fold.

It may not be known to all your readers that Europe is not naturally a grape growing country. All the vines in the first instance, having been brought from Asia;—and yet France alone, produces annually twelve thousand millions of pounds of grapes, giving employment to several millions of the French population.

The citizens of Paris alone consume ten millions of pounds of grapes annually for the table; a quantity probably much larger than all that is raised in the United States: and yet the grape is indigenous in our country, growing spontaneously in every State and territory in the Union. It is true some of our varieties are small, sour, and of little value, but we have many kinds that are excellent both for table use and for wine. The Isabella, although originally from the South, is perfectly hardy in the middle and eastern States, and thrives well in all parts of the Union, except in the vicinity of Cincinnati and some parts of North Carolina. As an abundant bearer, either in the garden or the vineyard, producing a delicious and wholesome fruit, it is unsurpassed in this or any other country. It also produces an excellent wine, equal to the best pure Lisbon.

The Catawba is considered by many persons a richer and finer grape for table use, than the Isabella. At Cincinnati it is the favourite for producing a rich wine, similar to the finest Hock wine of Europe. Campaign has also been made from the Catawba, which readily sold at Cincinnati at \$15 per dozen bottles. It is a fine bearer and thrives well as far north as Croton Point, on the North River, forty miles above the city of New York. It is not quite as hardy as the Isabella.

The other favourite grape cultivated at Cincinnati, is there called the "Cape grape;" at Vevay, Indiana, it is called the "Constantia;" at York and Reading, Pa., the "Madeira;" at Philadelphia, the "Alexander;" at Flushing, N. Y., the "Schuylkill Muscadell;" and at some other places, the "Winne grape." It is a constant and abundant bearer, perfectly hardy, and produces wine which is equal to good Madeira.

The *White Scuppernon* has long been celebrated at the South for producing a rich

light coloured wine, similar to fine Hock. A single vine has often produced one hundred and fifty gallons of pure wine in a season. It is not sufficiently hardy for the eastern or middle States.

The four varieties above named, are the most celebrated for wine.

Elsinborough, Longworth's Ohio, Norton's *Virginia Seedling*, Weller's *Halifax Lenoir*, *Vine Arbour*, *Hansteretto*, *Missouri*, and *Herbemont*, are fine table varieties, but so far have not proved so valuable for wine as the four kinds first named.

Until within a few years, it was considered a settled point, that wine could not be made in this country without the addition of sugar or alcohol. There was never a more egregious error; and the first to teach us in this matter, were the German vinedressers, when they commenced the vineyard culture in this country. Now at Cincinnati,—the vicinity of Reading, Pa.,—and in other principal vine growing districts, neither sugar nor alcohol is used; and the wine is in higher repute than ever, and commands a better price.

At the Hermitage vineyards in France, the annual average vintage is from 210 to 260 gallons per acre. At Cincinnati, the average is from 450 to 500 gallons per acre.

In France the average price of lands is \$200 per acre. In this country the average price would not amount to \$50 per acre. It is true, that once in a few years the crop of grapes fails; but this is the case with all crops. This failure happens oftener in France than in this country; but notwithstanding this and the high price of land in France, the cultivation of the grape is the most profitable culture in the kingdom, and the hands are better paid for this, than for any other agricultural employment.

Our American wines have to be sold at lower prices than foreign wines of the same quality, in order to introduce them. Catawba, one year old, now sells at Cincinnati at about one dollar and fifty cents per gallon. In bottles, the usual retail price is from forty to fifty cents per bottle. Last season an analysis of Catawba wine and some of the best Hockheimer of Europe, was made by Dr. W. B. Chapman, one of the first chemists of Cincinnati, which proved that our Catawba was the purest and richest wine.

In 1845, 23,219 gallons of wine were made in Hamilton county, Ohio. Many of the vineyards being young, bore for the first time, and more than half of the crop was cut off by the frost and rot—a failure that may not happen again for ten years.

William Rasor, near Cincinnati, has a vineyard of one acre—it came into bearing

in 1837, and for nine years produced an average annual yield of four hundred and seventy-seven gallons of pure wine, and at an average annual expense not exceeding one hundred dollars.

B. G. BOSWELL,
230 Pine st., Phil'a.

Dec. 22nd, 1846.

British Association.

THE following extract is given from the proceedings of the Sixteenth Meeting of the British Association.

"Professor Daubeny communicated a paper 'On the Rationale of certain Practices employed in Agriculture,' specifying amongst the rest the use of quicklime and of gypsum as fertilizers to the land. The former of these substances he supposes to act in part, by rendering those inorganic substances which are present in the soil more soluble, or—in accordance with the views laid down by the author in a memoir which he has published in the Philosophical Transactions of last year—by converting the dormant constituents of the soil into active ones, or into a state in which they become immediately available. He appealed to the authority of Professor Fuchs, confirmed by that of Mr. Prideaux, of Plymouth, as showing that the alkali may be extracted from granite readily by water, after the rock in a pounded form has been heated, together with quicklime; and he stated that a soil exhausted by long-continued cropping, was found by himself to yield to water twice as much alkali, after having been mixed with quicklime, as it had done before. Hence the frequent application of lime tends to produce exhaustion in the land;—not only because it supplies in itself no fresh alkali, but likewise because, by rendering that which the soil contains more soluble, it causes it to be washed away more readily by atmospheric water. Ploughing, and other mechanical methods of pulverizing the soil, appear to act in the same way; and so, also, may we suppose to do the sprinkling of the soil with sulphuric acid, as is practised in some parts of the continent. The author then alluded to the various modes of explaining the advantage attributed to gypsum, which certain leading agricultural chemists had proposed: one ascribing its virtues to the direct influence of the salt; another to the indirect good resulting from it, owing to its property of fixing ammonia; a third, regarding its acid constituent as of the principal utility, and a fourth, its base. Dr. Daubeny gave reasons for rejecting the third and fourth of these hypothesis; but considered that the use of gypsum may be in

part attributable to the first, and in part to the second, of the causes pointed out. He supposes that this substance is generally useful to all plants, from its property of fixing ammonia; and also especially serviceable to certain species, by supplying them with a salt which they require for their development. He was principally anxious, however, to bring forward this subject, in the hope of inducing chemists to institute such experiments for the purpose of settling the question at rest.

A long discussion followed;—several agricultural gentlemen remarking on the effects of carbonate of lime on wheat crops, and on the resulting weakness of the straw, owing to a deficiency of the silicate of potash necessary for the formation of the supporting epidermis of the grass. Some specimens of the disease in turnips, commonly called fingers-and-toes, were exhibited; and it was stated that the superphosphate of lime was a remedy for that disease. The Bishop of Norwich, however, remarked that the cause assigned for this disease was not that to which he believed it must be attributed. The flow of the sap was checked by the action of an insect, and then an abnormal condition developed. This year, in many parts of the country, this and similar diseases were very prevalent; and the reverend prelate was disposed to regard the existence so abundantly of this insect as in some way connected with the electrical condition of the atmosphere during the exceedingly hot weather which has prevailed—producing with extreme rapidity the decomposition of animal and vegetable matter. Dr. Faraday made a few remarks on our general ignorance of the chemistry of vegetable life, and on the importance of such meetings as the present, where the chemist and the agriculturist might meet and compare results. Since the days of Davy the science of agriculture has considerably advanced; but all that he heard convinced him of the fact, that we were only standing on the very threshold of an inquiry which would eventually, now that attention was so generally turned to the subject, advance our knowledge in an extraordinary degree.

Professor Grove spoke of the decomposition of water into its constituent gases by heat, and in the first place, called attention to the fact, proved by Cavendish and the French philosophers, that oxygen and hydrogen being exposed to a high temperature, or the electric spark, immediately combined to form water. He then announced his discovery that all the processes by which water may be formed are capable of decomposing water.

A description of 'the Fairy-rings of Pastures,' with which most persons are familiar, was given by Professor J. T. Wray; and it was stated that the grass of which such rings are formed, is always the first to vegetate in the spring, and keeps the lead of the ordinary grass of the pastures till the period of cutting. If the grass of these fairy-rings be examined in the spring and early summer, it will be found to conceal a number of agarics, or 'toad stools,' of various sizes. They are found situated either entirely on the outside of the ring, or on the outer border of the grass which composes it. Decandolle's theory, that these rings increased by the excretions of these fungi being favourable for the growth of grass, but injurious to their own subsequent development on the same spot;—was remarked on, and shown to be insufficient to explain the phenomena.

The author's view of the formation of these rings, is as follows: A fungus is developed on a single spot of ground—sends its seed, and dies: on the spot where it grew it leaves a valuable manuring of phosphoric acid and alkalies—some magnesia and a little sulphate of lime. Another fungus might undoubtedly grow on the same spot again; but upon the death of the first, the ground becomes occupied by a vigorous crop of grass rising like a phoenix on the ashes of its predecessor. It would thus appear that the increase of these fairy-rings is due to the large quantity of phosphated alkali, magnesia, &c., secreted by these fungi; and whilst they are extending themselves in search of the additional food which they require, they leave, on decaying, a most abundant crop of nutriment for the grass."

For the Farmers' Cabinet.

Landlord and Tenant.

TO THE EDITOR.—In the last number of the Cabinet, page 164, under the head, *An Important Decision*, the statement of a case is given, involving the question, whether in the absence of an agreement on the subject, a landlord is entitled to retain on land leased by him, the straw of the crop raised during the tenancy, so that it may be consumed on the land, or whether the straw belongs to the tenant absolutely, so that he may remove it from the land and dispose of it as he pleases.

According to the report of the decision of Judge Lewis of Lancaster, the landlord's right was sustained. Near the close of the extract from Judge Lewis' opinion, he alludes to the case of *Craig vs. Dale*, ruled in the Supreme Court of our State, and which is in direct opposition to his opinion,

and says that he believes the decision in *Craig vs. Dale*, will not be adhered to.

Now it so happens that the Supreme Court had at that very time re-affirmed the doctrine of *Craig vs. Dale*. This was done in *Iddings vs. Nagle*, 2 Watts and Sergeant's Reports, page 22. *Craig vs. Dale*, is reported in 1 Watts and Sergeant, 509.

After two concurrent decisions of the highest court of judicature upon the same point, is it reasonable to regard the law on that subject as *unsettled*?

I have made this communication to you very hastily, from the apprehension that a reliance on the opinion of Judge Lewis—a Judge of a Court of Common Pleas, whose decisions are liable to review by the Supreme Court—might lead some worthy farmers into litigation, which must end in defeat.

In conclusion I transcribe the syllabus of the respective decisions of the Supreme Court above alluded to.

"The way-going crop to which a tenant is entitled upon his leaving demised premises, includes as well the straw as the grain, which he may remove and dispose of as he pleases, being subject only to the terms of his contract, and not to any supposed custom of the country on that subject."—*Craig vs. Dale*.

"A lease between a landlord and tenant is to be construed by those rules which govern the construction of contracts, and not by the custom of the country. A tenant is entitled to the straw which grew upon the land, or not, as his CONTRACT PROVIDES."—*Iddings vs. Nagle*. G. M. S.

December 23rd, 1846.

Wages of Labour.

FROM an instructive article on the subject of agricultural labour in different countries, its wages, and the comparative condition of the labourer, in the London Mark Lane Express, we condense the following facts: In our estimates we have called the shilling sterling 22 cents, though its value is a trifle less; and the comparison, though instituted with the English labourer, can be easily made with those of this country.

In England, the average rate of agricultural wages for an able man, with a family, is nine shillings, or \$1 98, per week. From this is to be deducted cottage rent, at 35 cents per week, leaving \$1 63 per week, to provide himself with the necessities of life. In France, a labourer in the same situation receives \$1 04 per week; in Prussia, 66 cents; in Germany, \$1 02 per week; in Holland and Belgium, \$1 20; in Italy and the Austrian States, \$1 15. It will be re-

membered that these averages are those of the common labourer—shepherds, carmen, and mechanics, receiving rather more. The food which the wages named above will purchase in the several countries, is stated in the "Express" as follows:

In England the labourer can obtain for his 163 cents, or his week's wages, either 30 lbs. of bread, or 11½ lbs. of meat, 7½ lbs. of butter, 12½ lbs. of cheese, or 174 lbs. of potatoes.

In France, with his 104 cents, he can buy either 46 lbs. of bread, 13½ lbs. of meat, or 261 lbs. of potatoes.

In Prussia, with his 66 cents per week, the labourer can buy either 36 lbs. of bread, 16 lbs. of meat, or 8½ lbs. of butter.

In Germany, with 102 cents he obtains either 43½ lbs. of bread, 18 lbs. of meat, 11½ lbs. of butter, 24 lbs. of cheese, or 54 quarts of beer.

In Holland and Belgium, 120 cents will buy either 56 lbs. of bread, 22 lbs. of beef, or 460 lbs. of potatoes.

In Italy and the Austrian States, the labourer, with his 115 cents, can buy either 50 lbs. of bread, 22 lbs. of beef, 8 lbs. of butter, 8 lbs. of cheese, or 168 lbs. of potatoes.

This table is interesting, as showing not only the prices of labour in the countries named, but also the price of bread, meat, butter, cheese, &c. It is true, the bread is stated by the pound instead of grain by the bushel; but as the flour of a bushel of wheat, say 40 lbs., will make from 63 to 65 lbs. of bread, an estimate may easily be made of the quantity of wheat or flour a man in any of the countries named would receive for a week's work. The labourer in this country, who receives his bushel of wheat a day, or other articles in proportion, will readily conceive the meagre fare, and slender chance of "laying by anything," which must attend the foreign agricultural labourer. In all these countries it will be seen the value of provisions is at least as great as here, and in some instances much greater. It is only by the comparisons which such authentic statements enable them to make, that the free labourers, the farmers or mechanics of this country, can fully appreciate the advantages of their position.—*Cultivator*.

THE principal distinction between animal and vegetable products, is the presence in the one case, and the absence in the other, of nitrogen. Many animal secretions, however, such as the fatty oils, are destitute of nitrogen, and many vegetable products, such as gluten and the organic alkalies, contain it.

Manures.

By repeated cropping, the best soils become exhausted of their fertile properties, while naturally indifferent soils require the administration of certain qualities, before they will yield a due return to the labours of the husbandman. There are, no doubt, soils so naturally rich in some parts of the world, that, though used for twenty or more years in growing successive grain crops, they show no indications of impoverishment; yet even these must in time be exhausted, and therefore, in all circumstances, manures, or artificial fertilizers, require the consideration of the husbandman. In our own country they are of the first importance.

Manures are of two classes, both of which have distinctive characters, and perform different offices in the economy of vegetation. The first of these comprehends all animal and vegetable decomposing matter, and is principally employed in feeding the plant, augmenting its size, and sustaining the vital energy. The second operates more on the soil and decomposing matter than in directly contributing to the support of the vegetable. The first kind has been called animal and vegetable, and the second fossil, manures. Under this second class are ranked not only lime, marl, and gypsum, but sand, gravel, and clay, so that all the meliorations which are effected on soil by blending and compounding the original earths, are compressed within its limits.

The animal and vegetable manures, which are putrescent in their nature, are foremost in importance and dignity. They consist of certain elementary parts of animal and vegetable substances, elaborated by a natural chemical process in the course of the decomposition or decay of the bodies. The excrementitious matter, or dung of all animals, is no other than the remains of the vegetable or animal food which has been received into the stomach, undergone there a partial dissolution, and been thrown out as unserviceable for the further nutrition of the system. From this universal decay of organized matter, and its conversion into fluids and gases, it would seem that animal and vegetable substances, and excrementitious matter, are resolvable into each other, and are only different parts of the same original principles. The essential elements of them all are hydrogen, carbon, and oxygen, either alone, or in some cases united with nitrogen. Conveyed by liquids or moist substances into the ground, these elements are sought for as nourishment by the roots of plants, and so form the constituent principles of a new vegetation. Inasmuch as flesh consists of a

greater concentration of these original elements than vegetables, the manure produced by carnivorous animals—man included—is always more strong in proportion to its bulk than that discharged by animals who live only on herbage. Experience fully proves that all animal and vegetable manures are but varieties of one kind of principles; their actual shape and appearance being of much less consequence than the degrees of strength in which these principles reside in them.

Whatever be the value of the elementary principles of manures, practically they are of no use as manure till they are disengaged by putrefaction. It may be further observed, that putrefaction is in every instance produced by the elementary principles being set at liberty either in a fluid or volatile state. If a quantity of stable dung be piled into a heap, and freely exposed to all varieties of weather, it soon heats and emits a stream of vapour, which is often visible as a cloud over it. These vapours, and also the odours sent forth, are gases escaping, and the heap is constantly diminishing in weight and volume; at the end of six months, if there have been alternate moisture and warmth, not above a fourth of the original essential material remains to be spread on the field; there may be in appearance nearly as much substance, but it is comparatively of little value—the real manure is gone, and what remains is little better than a mass of unputrefied rubbish.

It may be safely averred, that no principle connected with agriculture is so little understood or thought of as that which has been now mentioned. We therefore crave the most earnest attention to it by every reader of these pages. Generally speaking, the excrementitious matters thrown to the dung-hill are treated with perfect indifference as to the effects of exposure and drainage away in the form of liquids. It cannot be too strongly stated that this is a gross abuse in farming. The putrescent stream contains the very essence of the manure, and should either be scrupulously confined within the limits of the dunghill, or conveyed to fresh vegetable or earthy matter, that it may impart its nutritive qualities.

A knowledge of this important truth has led to the practice of making compost dunghills, in which the valuable liquids and gases of different kinds of manure are absorbed by earth, or some other substance, and the whole brought into the condition of an active manure for the fields. Hitherto it has been customary to speak of dunghills, but there ought to be no such objects. The collection of manure from a farm-yard and offices should form a *dung-pit*, not a *dung-*

hill; and the manner of making and managing the contents of this pit on the best principles is well worthy of our consideration.

The situation of the dung-pit should be near the stables and cow-houses, and placed so low that all streams of urine from them should flow at once into it, so that nothing be lost. It may be three or four feet deep, and of a size proportionate to the stock of cattle usually kept by the farmer. It is not necessary that it should be built round with a wall, or have a perpendicular descent, as it may slope gently inwards, and deepen gradually towards the centre. It should, if possible, be covered by a roof, to prevent the action of the sun. If the bottom be found firm, impervious, and capable of containing the juices, no further trouble is requisite, and the work is complete; in many instances, however, it will be necessary first to puddle with clay, and then line the bottom with flag-stones. Into this pit, earth, with refuse straw, should be brought and strewed over the bottom and sloping sides, to the thickness of nine to twelve inches, and this will form an inferior layer to absorb all that portion of the liquid manure which naturally runs to the bottom. The pit is now prepared to receive all kinds of animal and vegetable manure, which, when brought, should be always laid evenly over the surface. In Scotland, such dung-pits are common, and in the course of accumulation, a young or wintering stock of cattle is allowed to go at large upon the whole; the animals being at the same time fed on a proper allowance of straw. Care is also taken to mix, in laying on, the dung brought from the cow-house, stable, and piggeries, so that the rich excrement of the well-fed animals may be incorporated with that of a poor description from others. It is likewise of the utmost importance, though too frequently neglected, to convey to the pit the entire liquid refuse of the farm-yard, provided the quantity be not so great as to make it advisable to have a separate pit for its reception.

It is customary to cart away the material of the dung-pit at convenient opportunities—usually during the frosts in winter—to a place in the fields, near where it is to be used, and there pile it up in a quadrangular heap of about four feet in height. Dung carted out in this manner, is ready for the turnip husbandry in June, and the practice is otherwise convenient. It may, however, be stated, that for want of attention to principles already explained, such dung-heaps, by exposure for months to the weather, must lose some of their valuable properties. In

every instance, the dung-heap in the fields should be placed in a hollow situation, with a substratum of earth, and should have a scattering of a few inches of earth over it, and around the sides, to keep in the volatile gases. When the dung-pit has been thus emptied, it may again be progressively filled as before; and when it is carted out in any of the spring months, it will be found necessary to turn it once, or oftener, for the purpose of accelerating the decomposition of the strawy part of the mass. It may be of use to know, however, that the dung required for fallows for wheat in autumn, may be less putrefied than that for turnip crops.

The urine of cattle is of great value as a manure, and this is so well known to the farmers of Belgium, that they use tanks for collecting the liquid from the cow-houses, and thence they pump it up, and pour it over the land at the proper season. When mixed with vegetable refuse, moss, or earth, it forms an excellent compost. It is deeply to be regretted that so little is known on this subject; and such is the carelessness of farmers and cottagers, that the urine from their cattle-stalls is in most cases suffered to go completely to waste. The value of night soil and human urine as manures is equally great, but both are much neglected in British agriculture. Without entering minutely into details on this point, it may be stated, that the offensive odour of all excrementitious matter may be neutralized by an intermixture of gypsum, or lime and earth, and in this state be used as most valuable manure. Bone-dust is now used as a highly nutritious manure on light soils; and it is reckoned that 100 bushels are equal to forty cart-loads of farm-yard manure. Common sea salt, when judiciously administered in moderate quantities on arable land at the time of fallowing, has been found of great value for its manuring and cleaning properties. It promotes fertility, is a remedy against smut and rust, preserves the seed from vermin, and is particularly useful in increasing the produce of grass lands.—*Chambers's Information for the People.*

Answers to the Queries of the State Agricultural Society of S. Carolina.

We have not seen the queries to which the following communication of our intelligent neighbour and excellent farmer, M. L., refers;—we copy from the *South Carolina Temperance Advocate*.—Ed.

THE questions propounded on agriculture by the "State Agricultural Society of South Carolina," indicate an accurate perception of the points requiring investigation, and would, consequently, require a degree of

scientific knowledge in reply, to which few can pretend.

To the queries, regarding matters of fact, there will be no difficulty in making a reply, though it must be borne in mind, that in a State, presenting so vast an agricultural surface as Pennsylvania, much diversity of practice as well as theory, must prevail.

Dry statistical details, which can be obtained from published documents, it will not be advisable to refer to, except for occasional illustration: for if I rightly appreciate the tenor of several of the questions, the information required can be afforded by a practical man of observation and experience.

It is only in this connection that my locality or identity can interest the parties who require the information; but the distance to Philadelphia being only twelve miles, it will, of course, be understood that my observations more especially refer to Eastern Pennsylvania.

There are some vestiges yet remaining, to prove that this was a favourite agricultural region of the native Indians; and I have seen clearings in the extensive woodlands of the Moravians, fifty miles north of Philadelphia, which were known to have been Indian corn-fields. That these tribes did not raise sufficient for their sustenance, is proved by the thousands of tons of oyster shells on the inlets of Chesapeake Bay, and the perfectly straight Indian path leading from this region to that; which is yet distinctly perceptible in the remnant of primeval forest on the route. When this region was first settled by the Swedes and Dutch, they chose, for obvious reasons, locations on or near navigable waters. But when William Penn parcelled out the country among his followers, many of the original colonists were from Wales, and the hilly districts of the West and North of England. They were rather accustomed to pasturage, than a strictly agricultural people; and in consequence they settled on hilly ground, well watered by springs, passing over the primitive limestone valley, which is now the garden of the country, because it was heavily timbered and not so well watered. Most of these settlers were Friends or Quakers, and notwithstanding the abolition of the laws of primogeniture, many of the descendants of these old families yet remain in possession of the estates bequeathed from an antiquity remote for the United States.

It is to this people we are chiefly indebted for the hereditary reputation and superior quality of the Philadelphia butter, the flavor of which is also due to the very ancient pastures, well set with green grass and white clover—*Poa Pratensis* and *Trifolium Re-*

pens—*Poa Pratensis* or smooth stalked meadow grass, is identical with the famous Kentucky blue grass; the writer having had sent him from Kentucky, and verified this fact, which was before discovered by Dr. Darlington, of Westchester. Many other species contribute to the luxuriance of these old green fields; especially the sweet vernal grass,—*Anthoxanthum Odoratum*,—which is highly aromatic, and according to respectable authority, is itself the primary cause of the excellence of the butter. Land in permanent grass, from the cheapness with which it can be kept up, requiring only at long intervals a top-dressing of lime and plaster, may be considered as in a condition more profitable, than under any description of tillage performed by hired labour. The more ancient the sod of grass, the better is it relished by the cattle, and the more productive is it in milk and butter; resembling, in this respect, the pastures of Devonshire, where fields which have been but twenty-five years in grass, are not considered equal to those which have remained unbroken for fifty or one hundred years. It is but fair to state, that though the writer, under certain limitations of distance from market, considers the views laid down as undoubtedly correct, yet many intelligent agriculturists, justly appreciating the value of the crop of Indian corn, are in the habit of breaking up their old grass fields in rotation, and planting them with corn. The approved method is, to follow this crop with oats the ensuing spring—then to manure heavily, plough three times, and sow with wheat and grass seed in the fall, followed by red clover seed in the spring. The course of rotation varies, according to the division of farm land, from five to eight, or even ten years.

Indian Corn.—The average crop of Indian corn in well improved and naturally fertile soils, may be set down at 50 bushels per acre, and if stimulated by the application of lime, plaster, ashes, or manure to the hill, 75 bushels per acre may occasionally be obtained. Taking this whole region, however, 30 bushels per acre may be considered nearer the true average, under the actual system now pursued. Much diversity prevails also in regard to the particular description of Indian corn—*Zea Mays*—which is cultivated, varying in fact from the small yellow Flint corn of Canada, which ripens in three months, to the large dog-tooth Southern corn, which in this latitude will scarcely ripen in six months. The writer has experimented upon corn from Tennessee, South Carolina, Maryland, Canada, China, the Baden corn, and other varieties, without a "local habitation or a name."

This experiment answered a double purpose. 1st. It afforded him an opportunity to furnish the agent of a German Agricultural Society with a great variety for transmission to that country, as samples; and 2ndly, induced him to settle upon the old Pennsylvania Yellow eight-rowed Flint corn, which has been cultivated in Montgomery county, Pa., for a period of a century, and was very probably the corn of the Aborigines, as it is found that every description of yellow corn has a tendency to identify itself with this variety, after a few years cultivation. Many do not consider it so productive as the Gourd Seed corn, but I have raised 65 bushels per acre on large fields, and it will command 10 per cent. more in price than the Gourd Seed. The Philadelphia Agricultural Society awarded a premium for a sample of this corn at their late exhibition. It is particularly adapted to feeding cattle, after having been ground with the cob, which, from its small size and texture, and extreme hardness, amalgamates perfectly with the corn, and makes handsome meal, almost as much prized as meal from corn and oats mixed. We usually plant four grains to the hill, and it has a tendency to produce two, and even three or four ears to the stalk, and in very productive seasons, sprouts only twelve or eighteen inches high, are frequently crowned with a small ear. I always plant from stalks that produce two to four ears each. On the whole, therefore, I prefer this corn, viewing it in every economical light. Its productiveness, its adaptation to every variety of soil, its acknowledged superiority for meal and bread, and in fact for every thing but hominy, in which capacity I have not seen it tried. It is admitted that Indian corn, in such varieties as were adapted to the great diversity of climate, existed in almost every part of the American continent on its first discovery. But much ingenious speculation has been resorted to, to prove that it was not known in the Old World previous to the discovery of America. Recent travels in Central Asia, however, with the facts previously known, seem to incline the more mature opinion of enquirers to admit the existence of "*Zea Mays*" in some parts of Asia, from a remote epoch.

Oats.—The oat crop, which succeeds Indian corn, possesses many and important claims upon the good opinion of the farmer, though not used in this country as in the North of Britain, as the food of man; and in the Southern part of Pennsylvania, degenerating in weight and value from the high temperature of the climate, yet as food for horses, it is unsurpassed. Not pos-

sessing the nutritive properties of corn, it has not its heating and feverish tendencies, and is especially valuable as food for horses on a journey. It succeeds well on land rather cold and wet, and perhaps the best oats produced in Pennsylvania, grow upon the table lands of the Alleghany mountains. It is indeed from these more inclement and cold regions, that we are forced to procure a renewal of our seed. It is sown roughly, —three bushels to the acre—after a single ploughing, in the month of April, and is harrowed in; it is rolled occasionally, after being up two or three inches. This crop has the valuable property by its rapid growth of overshadowing and discouraging the growth of weeds, and consequently leaves the ground in an admirably clean condition for the wheat and grass crops which follow it. The straw of oats is much esteemed as winter fodder, and used with the blades of corn and a small proportion of hay, will carry cattle in good condition through the winter.

As high as 60 bushels of oats have been obtained per acre, though 25 to 30 bushels may be considered a fair crop. The writer this season had about 40 bushels per acre of very heavy oats, say 36 lbs. to the bushel. There are several varieties of oats cultivated, called by various local names, as Barley oats, the seed of which I have bought at \$2 per bushel, but found it to degenerate. The Black oats, a heavy good grain, and the one-sided or Tartarian oats.

Wheat.—There can be no doubt that we owe the various descriptions of wheat to the varieties of soil and climate in which it is cultivated; and it is in vain for the agriculturist to attempt to force nature. The wisest course for him to pursue, is to adapt the crop skilfully to the soil, climate, and geological formation in which it may be his lot to sojourn. After experimenting with the beautiful white Genesee and beardless wheats of several kinds, and especially with some magnificent grains of wheat, brought from the vicinity of the ancient Jerusalem, all either were destroyed by the ordinary enemies of the wheat, viz.: fly or mildew, or exhibited a decided tendency to be resolved, or at least approximate to the old Pennsylvania Red Chaff bearded wheat, a sound good grain, producing rich flour, but not commanding the highest price in the market. This change is especially observable, in respect to the Mediterranean wheat, which about ten years ago, when introduced among us, was a coarse, flinty grain, more nearly resembling rye than wheat. Its value consisted in an exemption from the ravages of the Hessian fly and mildew, so that it almost entirely superseded every other de-

cription of wheat. Every year, while improving in quality, it is losing its exemption from the assaults of the enemies of the wheat, so that it is evident that in a few years its peculiarities will disappear, and we shall have only the old Red Chaff bearded wheat again.

There has not been an unexceptionable wheat year since 1835, when the crop averaged 40 bushels per acre, on lands that have rarely reached 30 bushels since, and generally not more than 25 bushels per acre. The approved system, when it is intended to lay down oats stubble to wheat and grass, is to plough three times, and harrow as often. The accumulated manure of the year is spread, after the first ploughing, at the rate of twenty large ox-cart loads to the acre, which is ploughed under and suffered to lay until it is nearly time to seed the land, when it is again ploughed, and the sowing at the rate of two bushels to the acre, is then performed. After the grain is harrowed in once, grass seed, mostly Timothy—*Phleum Pratense*—at the rate of eight quarts to the acre, should be sown and lightly harrowed once. The seeding is finished by sowing red clover,—*Trifolium Pratense*—in February or March, at the rate of six quarts to the acre. This being a biennial, leaves the sod at the end of two years, in exclusive possession of the Timothy, which is considered so valuable for horses, that it not unfrequently brings \$20 per ton in Philadelphia.

Rye.—Rye is sometimes introduced in the system of rotation, either as a substitute for wheat, or more usually as an independent element in the course succeeding the crop of wheat, and being followed by grass, as above described. The straw of rye is considered the most valuable of any for manure and the various purposes of the farm, as thatching, making bands for bundles of corn fodder, &c. Rye, of admirable quality, is produced in the more Northern and hilly regions of Pennsylvania, but it is observed speedily to degenerate in the Southern part of that State. This grain, for several years, has not been productive, and the cultivation in this vicinity is on the decrease. Fifteen or twenty bushels per acre may be the average yield, and its cultivation is chiefly confined to lands of second quality.

Buckwheat.—This grain is extensively cultivated in Pennsylvania, and is frequently as low as fifty or sixty cents per bushel. The straw is of very inferior value for the production of manure, and its cultivation is chiefly confined to lands recently cleared, as it is an excellent tamer of wild lands, or to those of inferior quality.

Barley.—This grain is not extensively cultivated in our State, and is being gradually superseded by other more highly esteemed crops.

Potatoes.—This most important crop has been failing gradually for several years, and in my apprehension exhibited a gradual deterioration in constitutional stamina, long before it was overtaken by the fatal rot, which is now producing such disastrous consequences in the Old World. The importance of agriculture, in the eyes of statesmen, has never been more strongly developed than now, when kingdoms are convulsed, and empires may be overthrown by the failure of a single esculent. This, like some great convulsion of nature, may be the means of ultimate benefit, as the whole energy of science is now employed to discover a remedy for this fatal disease; though hitherto, unfortunately, without success, and what is more discouraging, exhibiting by disagreement a total failure of fixed principles. My own opinion is, that we shall have to renew our seed from the Andes, or wherever the root can be found in a state of nature, as I apprehend that by propagating almost exclusively from tubers for so long a period, a diminution of vigor has gradually taken place, which is but partially remedied by reproducing from the seeds of these enervated plants. Long before any public notice had been taken of the failure of this crop, I had almost ceased to attempt its cultivation, even from sets recently produced from the seed, because of a partial failure of the crop, very perceptible in the premature death of the vines, which instead of continuing green until late in September, frequently died in July or August. It may, I think, be laid down as a principle, that any plant propagated only from shoots or layers for a long period, that is capable of reproduction from the seed, will exhibit a tendency to deterioration, or in farmers' phrase, "run out."

This crop has not been, however, much worse this season than last—and I have found by cutting off the tops, and allowing the root to remain in the earth up to November, we got a better article than by early digging and exposure to the air. Those infected, die in the earth, and leave only a mass of corrupt matter, which may amount in some cases to twenty-five or fifty per cent of the whole crop. Low, moist grounds are much more liable to blight, than high, dry light soils; and I know of an instance on the latter description of land, where a very large and healthy crop has been produced this season, by using horse stable manure, very pure from the city. Two hundred bushels to the acre, are considered a very

large crop with us, and of late less than one hundred bushels come nearer the mark.

Manures.—It is only of late years that science has discovered and partially applied, the animal and vegetable refuse of the manufactures to the use of the farmer. A commencement has now been fairly made, and the glue-boilers, tobacco manufacturers, colour manufacturers, sugar refiners, wool combers, akin dressers, button makers, and numerous other tradesmen, are made to contribute to the fertility of the soil, what but recently was a public nuisance. Poudrette, also guano and bone dust, are coming into extensive use. All this, added to our plaster and lime, with the ordinary manures of the barn-yard, certainly give ground to hope for great ultimate benefits. All these manures and stimulants I have seen applied with manifest, but various advantage. My own experience has been rather in favour of a compost or marsh mud, with plaster, lime, and stable manure. Bone dust has not, on our heavy rich soils, produced anything like the effect described in England, and the consequence is, that bone gatherers are constantly travelling far into the interior collecting bones, which are ground in Philadelphia, and shipped in great quantity to that country. He who uses or consumes upon his own land, the straw and hay of his fields, selling only a proportion of his grains and fat cattle, may keep his land in an improving condition, especially with the aid of those invaluable stimulants, lime and plaster, and need look no further for manures.

This process of returning to the land the culm or straw it has produced, is recuperative, and is a wise provision of nature, without which all lands would have a rapid tendency to sterility.

Rotation of crops.—A judicious rotation will, of course, have reference to the particular article of produce of the greatest value in each district;—as a general rule, in all wheat lands, this will be wheat.

Some years ago, on an agricultural tour in the interior, about fifty miles, I heard of a German, who had introduced an improved system of cultivation, then generally adopted in that region. On visiting this man, Jacob Sheimer, of Northampton county, Pa., I found him a plain, practical old farmer, who in about thirty-five years, on a farm of 100 acres, with two hands, had realized about four times its value of \$80 per acre, besides raising and educating a family.

His process was as follows—his great object being wheat—having originally divided his farm into eight fields, of about twelve and a half acres each:—1st. Manure and

lime; plough in May, June and August; harrow and seed one and three-quarter bushels of wheat to the acre, which put in with a plough.

2nd. Clover seed, sown on wheat in the spring, six quarts to the acre, and pasture after harvest.

3rd. Plaster the clover in the spring; one bushel to the acre; cut clover in June; plough down second crop, and seed again with wheat.

4th. Wheat—Same treatment as No. 2.

5th. Pasture early in the season. Plough in August, and sow wheat.

6th. Wheat again. 7th. Plough stubble, sow rye, one and a quarter bushels to the acre: sow clover in the spring on rye.

8th. Plough clover sod and plant corn, and next season recommence the system on the fallow ground.

By this system, it will be observed that there were always three fields in with wheat, one in with rye, one with corn, two with grass and one fallow. His crops averaged about 1,400 bushels of wheat, 600 bushels of corn, 300 bushels of rye, and his land, when I saw it, appeared in excellent condition.

Breeds of Cattle, Hogs and Sheep.—Gentlemen in the vicinity of cities, prefer the stately Durham. Practical farmers still continue the native breed, a complete mixture of every race, though of late years the Eastern or Devonshire breed, is received with much favour. My experience is in favour of the last mentioned. The Chester county hogs are a highly improved and almost a perfect breed, and are fast superseding all others. Sheep are yet of the old unimproved sort, though many are crossing with the Southdown and other improved breeds. There are also admirable breeds of heavy farm horses.

Labourers.—These are hired by the year, month and day. Good hands by the year, are worth \$125 to \$150. Monthly hands for the summer, are worth \$15 per month; and the daily wages during harvest, are about \$1; at other times, about 50 cents, all exclusive of board. The German agricultural labourers from the interior, are excellent hands—industrious, trustworthy, and in the line of their business, intelligent. Many of the sons of independent German farmers are willing to hire themselves in the Anglo-American settlements for the purpose of learning the English language.

Agriculture neither asks nor receives aid from the State. There has been a geological survey of the State, at a vast expense, the final report of which is withheld. We have no

regular agricultural survey, though the reports accompanying the census of 1840, convey much information.

Improvements.—In no part of the world perhaps, are more substantial farm buildings to be found than in Pennsylvania. Built chiefly of stone, both barns and houses will last for ages. Many barns are from 100 to 200 feet long, 25 feet high, and 40 feet wide, being in proportion to the size of the farms. It is characteristic of our admirable German population, to build a good barn, and to get rich before erecting a house to correspond.

In fine, though farmers are not growing rich in cash, yet the progress of improvement is most manifest. Handsome, convenient farm buildings and fences—heavy wagons and light carriages, churches and meeting-houses—roads, lined with vehicles, conveying produce to mill or to market; and above all, a contented, well-fed, well-clothed, and happy population, all indicate a degree of prosperity unsurpassed by any other community on the globe.

MORRIS LONGSTRETH.

Valley-Green, Whitemarsh Township.

Montgomery co., Pa., Nov. 10th, 1846.

Officers of Philadelphia Agricultural Society.

At the annual meeting of the Philadelphia Society for Promoting Agriculture, held at their room, Washington Hall, January 6th, 1847. Kenderton Smith, vice president, in the chair. Present twenty-six members.

The minutes of the last meeting were read and adopted.

A letter was read by A. S. Roberts, informing the meeting that Professor Walter R. Johnson was about to deliver a course of lectures, to commence this evening, in this city, on Chemistry applied to agriculture, horticulture and animal economy. After which, the following resolutions were offered by him, and adopted unanimously:

Resolved, That the Philadelphia Society for Promoting Agriculture have learned, with great pleasure and satisfaction, that Prof. Walter R. Johnson contemplates delivering a course of lectures on Chemistry applied to agriculture, horticulture and animal economy.

Resolved, That in the opinion of this society, Mr. Johnson's course of lectures will be not only interesting to the community, but also highly promotive of the sciences of which he treats, and is worthy of the patronage of this and every association whose object is the advancement of scientific knowledge.

Resolved, That the treasurer be authorized to subscribe for fifteen tickets on behalf of this society.

Resolved, That the foregoing resolutions be published, and that a copy of them be transmitted to Professor Johnson.

A letter written by Mr. John Brooks, of Princeton, Massachusetts, and published in the Monthly Journal of Agriculture, on the subject of Guenon's Treatise on Milch Cows, was read, expressing great confidence in his method of testing their milking properties.

A circular received by the secretary from J. S. Skinner, Esq., enclosing the form of a memorial to the legislatures of the different States, on the subject of obtaining aid for the cause of agriculture from the general government, was read; and, on motion of Dr. A. L. Elwyn, a committee was appointed to obtain signers thereto.

The following amendment to the By-laws of the Society was offered by A. S. Roberts:

Resolved, That no person shall be eligible to the office of president for a longer term than three successive years.

Which, on motion, was amended by substituting two years in place of three, and agreed to.

After which, on motion made and seconded, it was agreed to go into an election for officers to serve the society the ensuing year; when the following named gentlemen were duly elected:

President—Algernon S. Roberts.

Vice Presidents—Kenderton Smith, Dr. A. L. Elwyn.

Recording Secretary—Aaron Clement.

Assistant Recording Secretary—P. R. Fross.

Corresponding Secretary—James Gowen.

Treasurer—George Blight.

Curators—Samuel C. Ford, S. S. Rickie.

Librarian—Aaron Clement.

On motion, adjourned.

Extracts from the minutes,

AARON CLEMENT,
Recording Secretary.

Report on Manure.

On looking over the Transactions of the New Castle County Agricultural Society, for the past year, several parts appeared to the editor highly valuable and of general interest. We are quite apt enough to travel on in the old beaten road, without turning aside to inquire whether or not it be the most direct one to the goal we are aiming at. The following *Report on Manure* may rouse some of us up to thinking, and possibly thence to action, and to a change in some of our modes of management. Without endorsing entirely all the views of the committee, there is no question but we are too apt to think that any spare grass on the farm is lost or wasted, if there be not some kind of stock to eat it up.—Ed.

The Committee on Compost and other Manures report, that they have had some experience in collecting and combining dif-

forest materials for the purpose of making manure, and the results have not produced a conviction favourable to the system as a means of improving the soil. The expense of carting out and mixing the different substances, added to that of removing them to the fields, is a very considerable item; that it will pay the expense your committee are not disposed to doubt, for any plan of manuring, the most awkward and expensive, appears to be better than none.

The late George Simmons owned a farm about five miles from Wilmington: he improved one of his fields by drawing manure from the city, which cost him, delivered, three dollars per cart load, and spread it at the rate of twenty loads to the acre, making sixty dollars for the manure, which was more per acre than his farm would have sold for, yet the increase in the crops justified the expense. The question, therefore, is not whether a certain application of manure is profitable, but whether the expenditure of labour and capital in any particular application of manure, such as making composts in New Castle county, has advantages great enough to recommend it as a preferable means of improving the soil. To this question, your committee answer in the negative; they do not believe that any known plan of making compost has advantages sufficient to recommend it to the farmers of New Castle county as the most profitable means of fertilizing the soil. But we do not wish, by this opinion, to prevent making composts after the plan recommended by John Jones, (whose letter to the committee we subjoin to this report.) Gather up every kind of decomposable refuse, leaves, twigs, scrapings from the wood pile, straw, chaff, old hay and weeds, and, if the expense is trifling, draw sand upon clay, and clay upon sand, but take all direct to the fields and turn it under the soil.

Keeping of stock, which has hitherto been considered the best means of enriching the soil, has, from the results of some well-attested facts, led to the opinion that it is a sure way to impoverish it. Your committee believe that second crop clover, hay, straw, and chaff will make more manure, left upon the land, than when passed through the animals.

William Polk, of Cantwell's Bridge, a strong minded, sensible man, who has obtained a large stock of practical information on this subject, says, he increased his corn crop ten bushels per acre by turning in the second crop clover, over other parts of the field which was mowed for the purpose of obtaining seed.

Your committee believe that the manure

of New Castle county is greatly diminished by the burdens of animals, under which the land seems to groan. It is the great object of every prudent man to investigate and inquire into the circumstances that surround him, and accommodate his practice to the most profitable employment of his labour and capital; and the interest of no one is greater than that of the farmer in carrying out this principle.

In the far West, and in the interior of the large States, where land is cheap, and almost inexhaustible in fertility, the raising of animals may be the most profitable course; it is an indirect way of transmitting their heavy crops of grain to a good market; but in New Castle county, where a few cents per bushel will carry their grain to the highest market, a calculation of profit and loss will show a different result. The vegetation consumed in raising the thousands of cattle and hogs in New Castle county, would make double the profit in grain if permitted to die and decompose upon the soil. A yearling calf, not stinted in winter feeding, well sold, will bring as much as it would have done if sold to the butcher at six or eight weeks old. A fat hog will sell for about the sum that the corn he has eaten is worth, so that the vast amount of vegetable matter consumed by those animals is a total loss, a drawback upon the manure heap. Your committee, therefore, suggest the propriety of testing some of those facts in relation to stock impoverishing the soil instead of making composts.

There is a field of eight or nine acres of corn within one and a half miles of Wilmington. Some of the acres have been measured, and found to yield more than ninety bushels of sound corn; it has not been limed, nor received more manure than other land upon the farm, that has never produced over sixty bushels of corn to the acre. It was manured last spring with a dressing of unmanufactured poudrette, a powerful manure it is true; but it is nothing more than is applied every year to much of the land around Wilmington, without any such results. The cause of this extraordinary crop, therefore, must be found in some other quarter than the application of manure drawn upon the soil. This field has not had a hoof pastured upon it for six years; it was mowed every year, and the second crop allowed to die upon the ground. The clover soon worked out and was supplied by a strong, deep sward of green and other grasses.

In grain growing districts, and such, in the opinion of your committee, is New Castle county, most of the inner fences may be dispensed with, which is an item of great

expense in grazing districts; a few acres of low land containing water, (if it can be conveniently found,) may be permanently enclosed for the animals necessary to carry on the farming operations. It is very difficult to remove old customs and habits, and so inveterate is the propensity to follow on in the path of our ancestors, that some people even love an old error better than a new truth; and in the case before us, we are aware that the prejudice is strong and deep against any plan tending to lessen the manure heap in the farm yard. The experiments of Liebig, Johnson and others, have, of late years, given a new spring to investigation into the fertilizing properties of urine and the excrement of animals, all of which we feel no disposition to disprove; we would rather make use of them as an argument in the support of our theory. It must be evident to the most superficial observer, that whatever the animal leaves behind, in the shape of urine and excrement, it carries away with it more fertilizing properties in the shape of beef, pork, tallow and lard; all of which are extracted from the soil.

The prejudice is strong against cropping as a means of impoverishing the soil, and we admit this prejudice to be founded in fact; but we deny it to any thing like the extent that is attributed to it. We believe the real cause is to be found in the droves of all kinds of animals, which, like the locusts of Egypt, "eat up every green thing." The moment the last sheaf of grain is out of the field, the destroyer comes in the shape of hogs, sheep, horses, colts, donkeys, horned cattle, geese, ducks, turkeys, fowls, that come and go when and where they please. If upon an old worn out field a tiny stalk of clover survives the spring frost and summer suns, it is snapped up or trampled down, and its fertilizing root and multiplying seed lost to all future time.

The impression is almost universal that any spare grass upon a farm is lost, if some kind of stock cannot be procured to devour it, which is, as we think, a very great mistake.

This hasty sketch of what we believe to be a mode of manuring land, far preferable to composts, or the accumulation of large heaps of barn-yard manure, manufactured mostly by animals, is respectfully submitted; and if it produces no other effect than investigation and additional facts, that should even prove your committee to have overlooked some counteracting results, they will feel themselves compensated, having full confidence that the surest guide to knowledge in agriculture, as in every thing else, is free

investigation, connected with a regular and systematic course of experiments.

SAMUEL CANNY,
DR. JAMES COUPER,
JOHN W. ANDREWS,
HENRY DU PONT,
J. R. BRINCKLE

The following is the letter from Major Jones, referred to in the above report.—

To the Committee on Compost Manure Heaps:

The subscriber begs leave to state, that on the 9th May last, he put up a compost heap on the Bommer principle *nearly*. That on the 18th, after the heap was set, the thermometer stood at 142° of Fahrenheit, when placed in a hole, made for the purpose, two feet below the top of the heap; that on the 27th, the mushrooms were growing out of the side and top of the heap and that in twenty days from setting, the heap, which was put up of dry wheat straw, would have done very well to haul out, if immediately ploughed under.

The subscriber would respectfully further state, that he set a compost heap on what he considers a much more economical and effective plan than the Bommer, the base of which consisted of a lot of near one hundred acres. The principal ingredient was clover seed, sown after wheat and oats in the spring of 1845, at the rate of about one bushel of seed to five acres, on a good portion of which a light dressing of manure was spread, the autumn following the sowing of the seed; that in the spring of 1846 he gave this lot or compost heap a further dressing of one bushel of plaster to the acre. That during the month of August last he turned this mal clover *well under* with a centre draft plough; and to facilitate the complete covering of which, a heavy harrow was used to comb down the grass previous to ploughing; and that during the early part of the present month, (September,) he harrowed this land well with a set of small, light harrows, lengthwise with the ploughing; then sowed with Pennock's drill 88½ bushels of Mediterranean wheat on seventy-five acres, including a part that was an oat stubble. This lot or compost heap had received a dressing of lime about ten years ago, not exceeding about forty bushels of lime to the acre, but has neither been pastured nor mowed the present season. This the subscriber considers the most economical and regular mode of making up, getting out, and spreading a compost, or dressing a field preparatory to sowing wheat, and gives a much better yield of wheat, and much less liable to fall, if of rank growth, than if manured in any other way.

J. JONES.

Best Regulated Farms. ●

We take the following from the *American Farmer* of this month, and though without a date, we presume it refers to a recent transaction. These reports on the management of farms are highly valuable in various respects; not only showing the degree of success that has attended the enterprise and industry of farmers, but, what is more important still, the means by which success has been obtained. There is one part of the statement which it would be gratifying to have explained. If the soil of C. B. Calvert's farm is naturally so unpromising, and was exhausted by the tobacco culture, and in its natural state incapable of producing any thing, what means did he take to enable him to apply barn-yard manure so bountifully? Did he contrive means to make it on the farm, or did he purchase it in Baltimore or elsewhere.—Ed.

The undersigned, the Committee on best Regulated Farms, appointed in conformity with the rules of the Prince George's Agricultural Society, beg leave to report: That they entered upon the discharge of the duty assigned them, as soon as they were notified by the competitors for the premiums, that their farms and plantations were in order for their investigation.

Walter W. W. Bowie, Richard S. Hill, Charles B. Calvert and Robert Bowie, Esqs., are the gentlemen who presented themselves as competitors, and invited the attention of the committee.

The farm of Charles B. Calvert, Esq., his system, his investments, and the highly gratifying results of the whole combined, challenged the closest attention of the committee, and merit the most profound consideration not only of this society, but of every Agriculturist in the lower counties of Maryland. Mr. Calvert has entirely given up the cultivation of tobacco, and directed his attention exclusively to the conversion of his farm into a grass-growing and dairy farm. In this he has completely succeeded; and this success is the more wonderful when it is borne in mind, that the soil on which this change has been effected is a cold, barren, cadaverous clay, in its natural and broken state producing nothing, defying all well directed efforts of the hoe and plough, and incapable of producing any thing. On this land, gypsum, so powerful and magical in its operation elsewhere, has no effect whatever; nor has any perceptible improvement from heavy applications of lime, made years ago, been at any time seen. So that your committee are of opinion, that no land in any portion of Maryland can be found, whose soil is poorer and less inviting to the noble efforts of the agriculturist. But this dead soil has been brought to life, and made to teem with the most useful and wealth-producing vegetation

by the application of barn-yard and stable manure combined; and to the credit of Mr. Calvert let it be recorded, that this great mass of manure, producing such extensive and decisive results, is the exclusive production of his own farm.

As one item of evidence on which the opinion of the committee is founded, we deem it not improper to let Mr. Calvert speak in his own words. In his prepared statement in answer to the fifteenth interrogatory, he says: "In answering this interrogatory, I beg leave to state, that I cannot ascertain precisely the amount of butter made on my farm, as I have no means of arriving at the amount consumed in my own family; but supposing that the object of the inquiry is to ascertain the amount derived from the dairy, I have to state that I have turned my attention particularly, during the last year, to making my farm a dairy and grazing one; and considering all the disadvantages which one has to contend against in every new pursuit, I think I have been quite as successful as I could expect for the first year. My dairy has yielded me from the first of January, 1846, to 1st October, 1846, in milk, cream and butter, \$2,391 98; and this leaves out about the best quarter of the year, so that the revenue of the whole year may be fairly stated at three thousand dollars, or more."

In addition to this, there are from one hundred and fifty to two hundred acres in grasses, yielding from one to two tons per acre, and producing a revenue, after the cows and horses are abundantly supplied, nearly, if not quite equal to that of the dairy.

The committee have taken but little into consideration the wheat, corn and oats, as the former was injured in common with all the wheat in this region, and the latter by frequent and heavy freshets, which were so disastrous to all flat lands having bold streams running through them.

The root crops, which are extensive, it is presumed are planted with a single eye for the benefit of the cows. From this very hasty view, there is one reflection that naturally arises, and it is a cheering and consolatory one to every man who is even possessed of the very poorest species of poor land, and that is, never to despair of his land; a reflection that is akin to the high-toned patriot's resolve—never to despair of his country, though danger may be on the wing, and the clouds may darken and lower around it.

If Mr. Calvert has not found out the philosopher's stone, he certainly has the road to wealth and an honourable fame, by the judicious application of barn-yard manure to the

most sterile soil. An example well worthy the emulation of every man.

The plantation of Col. W. W. W. Bowie, from its rapid and high state of improvement under its public spirited proprietor, merits the highest encomiums of the committee. It has already, in sharp competitions, received the second and third honours. It presents to those that have known it long, some most pleasing considerations; bespeaking management, system and untiring industry.—Galled knolls have been re-invigorated, gullies have been levelled, stumps and roots grubbed up, briars eradicated, wet swamps ditched and reclaimed, embankments to hold the Patuxent in check, erected at heavy expense and with indomitable perseverance, new meadows made and well set in timothy, ornamental trees, and fruit trees of the best varieties, planted out, woods have been felled, and the land cleared and cultivated. Great attention has been paid to manures, and the effects of this great right hand prop of the farmer is clearly discernible on every part of this well arranged, highly cultivated and beautiful plantation. Col. Bowie has overcome many and serious difficulties, showing to the committee and those around him, that he is possessed of the spirit of enterprise, with a head to plan and a hand to execute.

The plantation of Mr. Richard S. Hill evinces much labour and industry, although there is not that beauty and neatness of management which are so pleasing to the eye. This great omission may in charity be attributed to the fact, that the worthy proprietor is a bachelor, and lacks that stimulus and taste for the beautiful and ornamental, which in some cases can only be supplied by the kind and witching influence of a neat and tidy wife, an article in the way of domestic comfort and happiness, your committee with perfect unanimity recommend Mr. Hill to possess himself of right speedily. For his soil is first rate, and its yield abundant.

The plantation of the worthy president of this society, is another evidence of the spirit of improvement which is abroad in the land. He has given to the committee ample evidence, that his efforts are most judiciously applied to the enriching of a soil, which, in its natural and uncultivated state, offered but few temptations to the spirit of enterprise. His system appears well arranged, his houses and farming utensils in good order, his stock well provided for, and every thing around him appears cheerful, contented and happy.

Your committee regret exceedingly, that the limited time allotted to this report prevents them from going into an extended review of many facts and circumstances, well calculated to excite great interest in the

mind of every Agriculturist. But they trust that they have presented sufficient considerations to demonstrate, that great good grows out of a worthy and laudable spirit of competition. There are but few honours that confer more real satisfaction, than the honours of an Agricultural society, impartially bestowed; as the evidence of skill and industry, of management and labour. In the quiet of his family, and surrounded by his friends, the successful competitor points with laudable and heartfelt pride to his premiums, as so many monuments, which to him cannot be valued in money. In this he has a higher and holier pleasure than the successful chieftain, whose renown is written in the blood of thousands slain.

Your committee now proceed to the most delicate part of their duty, and that is, to award the three premiums. It is due to say, that, in many instances, they considered the merits of Col. Bowie and Mr. Calvert equal, and their only regret is, that they cannot award to each; but upon a review of every fact and circumstance brought to their consideration—and mainly based upon the written answers of each of those gentlemen to the interrogatories propounded—they have, after due examination and consideration, unanimously agreed to award the first premium to Mr. Charles B. Calvert, for his farm of fourteen hundred acres. As the committee consider it their duty to award the other premiums under the rules and regulations presented to them for their government, a majority have accordingly awarded the second to Mr. Richard S. Hill, and the third to Mr. Robert Bowie. Under the rules, it will be borne in mind that Col. Bowie, having heretofore obtained the second and third, could only compete for the first.

The first named of your committee would here take the liberty to suggest, that the spirit of competition could be rendered sharper and keener, by extending the bounds of competition. As at present constituted, the competitors must be confined to Prince George's county. There is a little river well known as the Patuxent; let that be crossed in the spirit of generous rivalry, and many a gallant spirit, with polished plough and pruning hook, will be found on its eastern banks, ready and anxious to enter the lists.

Your committee cannot conclude their report, without expressing the great pleasure they have derived from their excursion. Social feeling and generous hospitality prevailed at every place where they sojourned. They have derived much pleasure from the general evidences of improvement that were manifested on all sides. There were only one or two spots that presented themselves

in their ride, to mar the general harmony of the scene, and to proclaim that the shade of the sluggard was nigh.

All of which is most respectfully presented.

JOHN S. SELLMAN,
WM. C. OGLE,
JAMES MULLIKIN.

TURKEYS, GESE, POULTRY, &c.—The number of articles of this description, the produce of the surrounding country, which were brought into the city yesterday, almost defies calculation. The wagons along Second street extended as far south as Christian, and north to the junction of Second street with the Germantown road, being a continuous line—with the exception of the square between Chesnut and Market streets—of not less than three miles in length. Allowing 20 feet to each wagon and the horses attached, there must have been considerably over 700 vehicles, containing on an average, say, six turkeys, six pairs of fowls and two geese each. If this presumption is correct, there were 4,200 turkeys, 8,400 chickens, and 1,400 geese, displayed for sale from the wagons in Second street alone. This is exclusive of an equal quantity offered in the various markets and other stands for wagons, of which there are several. The price of turkeys was moderate, considering the existing demand, varying, according to the size and weight, from 62½ cents to \$3. Almost every one had a penchant yesterday for carrying home a fine fat turkey, preparatory to the feasting incident to Christmas.—*Ledger*.

BREAK BAD HABITS.—We often hear persons excuse a bad habit, because, they say, it is impossible to break it. This is not so. The late Mr. Loudon, the celebrated writer on gardening, &c., during the time he was suffering severely from the pain in his arm, found no ease but from taking laudanum; and he became at last so habituated to the use of this noxious poison, that he took a wine-glass-full every eight hours. After the amputation of his arm, however, he wished to leave off taking it, as he was aware of its injurious effects upon his general health; and he contrived to cure himself by putting a wine-glass-full of water into his quart bottle every time he took out a wine-glass-full of the potion, so that the mixture gradually became weaker every day, till at last it was little more than water, and he found that he had cured himself of this dangerous habit without experiencing any inconvenience.—*Exchange Paper*.

THE FARMER'S CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, FIRST MONTH, 1847.

SINCE the publication of our last number, we have bade adieu to the old year and welcomed the new. It is a season of congratulation and enlivened hope. The young and buoyant are happy in extended life, and the old—even the grey-headed and tottering—view with more or less of complacency, the privilege attained, but which they had scarcely ventured to look to, of dating another year still further down in the century. It may be well for us to have these fresh starting points—and it may be well that one of them at least, is a lively and animating one. If we glance backward on the past year, and find, as too many of us, alas! must acknowledge, that our progress in what is essentially good, has not kept pace with the revolutions of time's wheel, our bosoms may be stimulated by the cheering impulses around, to increase our diligence, and more thoroughly to appreciate and improve the many advantages of our respective positions. It may be also well to remember, that while his own heart is the garden in which the Christian is most assiduously to labour, and for his own household that he is most carefully to provide, yet "we do not live for ourselves only." It behoves us to watch all our stepplings, that we may discharge all our duties. May the year on which we have entered be better spent by all our readers and ourselves, than the last, for then it will be happier—and may every department, both in the heart and on the farm, give evidences of that improved management, which will at least be a ground of hope for progress.

THE AMERICAN HERD BOOK, containing pedigrees of Short-horn cattle: to which is prefixed a concise history of English and American Short-horns, compiled from the best authorities, by LEWIS F. ALLEN—has been kindly forwarded.

The long list of pedigrees, both of bulls and of cows, will be highly valuable to the breeders of these noble animals, and the history of the breed, which precedes the Register, will be carefully read by every admirer of this celebrated breed of English cattle. It is handsomely got up, and apparently with great care.

THROUGH the politeness of the publisher, George S. Appleton, No. 148 Chesnut street, we find upon our table EXPERIMENTAL RESEARCHES, on the Food of Animals and the fattening of Cattle, with remarks on the food of Man: Based upon experiments undertaken by order of the British Government. By ROBERT DUNBAR THOMSON, of the University of Glasgow.

We have found opportunity to look but little into this work. Its title, however, indicates its object, and it will doubtless be valuable to observing and calculating feeders, who study and reflect upon all the operations connected with the distribution of the fruits of their labour.

By reference to the minutes of the Philadelphia Agricultural Society, on page 192, it will be perceived that Professor Johnson is delivering at the Hall of the Academy of Natural Sciences, a course of eight Lectures on Chemistry, applied to Agriculture, Horticulture, and Animal Economy. Besides the general views of the subject included in the Introductory Lecture, which was delivered on the evening of the 6th inst., they will embrace—

1. An enumeration of the elementary substances which compose organized beings, with experimental demonstrations of their properties, and their relations to vegetable life.

2. The chief proximate constituents of plants—their chemical characters, relations and distinctive forms. Experimental proofs of their respective properties.

3. Soils, their origin, nature and varieties—their organic and inorganic constituents,—chemical reactions of their elements. Analysis of Soils.

4. Supply of food to plants;—causes which facilitate or impede it,—different organs concerned in its reception. Important considerations to the florist and orchardist.

5. Improvement of soils—in their physical properties and chemical constituents—Manures, mineral, vegetable, and animal. Irrigation and drainage. Ammonia in soils.

6. Animal bodies—chemical constitution—Nutrition. Growth, distinct offices of the several elements of food. Practical application.

7. Agricultural and horticultural products as food for men and animals.—Results of experiments.

8. Chemical transformations of animal and vegetable substances—natural and artificial. Applications to various economical and domestic arts.

We have no doubt these Lectures will be highly instructive, and sincerely hope our friend will have a class, before whom it will be his ambition to throw out his whole strength.

We have received a *Memoir on Maize or Indian Corn*, compiled with a good deal of labour and research, under the direction of the American Institute, by D. J. BROWN. It is preceded by BARLOW's poem, written many years ago, on the *Hasty Pudding*.

Now that the extended introduction of this grain is allowed into the markets of Great Britain, its history and uses become more than ever important, both here and in Europe.

A meeting of the citizens of Burlington county, N. J., to be held at Mount Holly tomorrow, is called for the purpose of taking into consideration the expediency of organizing an Agricultural Society.

THE farmers and cattle dealers of Chester and Delaware counties, Pa., held a meeting at West Chester on the 29th ult., to take means for petitioning the Legislature to pass a law authorizing the Governor to appoint an Inspector of cattle intended for the Philadelphia market, whose duty it shall be to examine the same, and distinguish between such as are fit for the knife and those that are not. It is said the business of the grazier and fair dealer is greatly injured by the

slaughtering and introducing into market the beef of cattle entirely unfit for the table.

ENQUIRIES are frequently made in relation to the effects of *Poudrette* on the corn crop, and the manner of using it. Reference to several of the last volumes of the Cabinet will afford the desired information. We may, however, repeat, that its mode of application is as simple as can be. If spread broadcast over the ground—and this is the preferable plan, if considerable permanency of effect is looked for—it should be at the rate of 20 to 40 bushels per acre, and harrowed in just before planting time. Should the first coat be a matter of importance, a gill or a little more may be dropped in the hill when the grain is dropped: let it spread about a little, and cover it up with the corn. This will require 10 or 12 bushels to the acre.

The demand last spring was greater than our ability to supply, and the effects were so generally satisfactory, that we anticipate again on the opening of the season, a similar lively market. We hope to have plenty on hand for all, and all are invited to give attention to this cheap manure. See advertisement on the last page.

GRICE & ELLIOTT have published a *Rural Register and Almanac* for 1847, in which our townsman, D. Landreth, the Foodman, No. 65 Chesnut street, has thrown together a great deal of valuable matter for the farmer and gardener.

THE quantity of rain which fell in the 19th month, 1846, was nearly three inches and a half. 3.437 in.

Penn. Hospital, 1st mo. 1st.

THE *Bridgton Chronicle* says that a hog raised by Thomas Tice, of Deerfield, was lately slaughtered, whose weight alive, was 844 lbs.—when dressed, 731 lbs.

WE learn from a Scotch paper, that an enormous turnip was taken up on the farm of Hume Mill, last autumn. It weighed 23 lbs., and measured 39 inches in circumference. It was of the *white globe* species, and the seed was raised by Brumlee, the tenant.

SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoes Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.
Philad., Feb., 1846. tf.

Valuable Farm at Private Sale.

THE subscriber offers for sale the valuable FARM on which he has resided for a number of years past, situated in East Bradford Township, one mile west of the flourishing Borough of West Chester. It comprises about 60 acres of naturally fertile and well improved land, under good fence, and well watered. The buildings are of stone, large, and in good repair. The mansion is pleasantly situated, possesses many conveniences, and is of modern finish, 44 feet front by 32 feet deep, with an eight feet entry, two rooms on each side, besides kitchen and wash-house, and six rooms in the second story. Pure water is introduced into the house and barn-yard by means of a force pump and water wheel propelled by a never failing stream.

The grounds are planted with fruit, ornamental trees and shrubbery, with a good orchard in full bearing. There are also a three-story barn, 40 feet by 56 feet, a carriage-house, work-shop, ice-house, wood-house, and an excellent and convenient milk-house.

This property is eligibly situated on the main road from West Chester to Lancaster, in an unexceptionable neighbourhood, and offers considerable inducements to one wishing to retire from active business, or to engage in agriculture on a moderate scale.

Apply to the subscriber, residing thereon, or to John Lippincott, No. 65 Marshal street, Philadelphia.

CHARLES LIPPINCOTT,

22.

West Chester, Chester county, Pa.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE,

AT D. O. PROUTY'S

AGRICULTURAL WAREHOUSE,

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—46.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.

Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA

AGRICULTURAL WAREHOUSE,

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's Improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpener Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW

Horticultural and Agricultural Ware-house,

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Swede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

THE subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Twelfth month 15th, 1846.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10-vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	68½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

GUANO.

TWENTY-FIVE tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by

S. & J. J. ALLEN & CO.,

No. 7 South Wharves, 2nd Oil Store below Market street, Philadelphia.

October 15th, 1845.

tf.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, for seven barrels or more, \$1 75 per barrel, containing four bushels each. Any number of barrels less than seven, \$3 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the Interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for wheat.

JOSIAH TATUM.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM. No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

TERMS.—One dollar per annum, or five dollars for seven copies—payable in advance.

All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. XL—No. 7.]

2nd mo. (February) 15th, 1847.

[Whole No. 144.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Settling in New Countries.

MR. EDITOR.—In No. 6, of last volume, I commenced a series of papers adapted to that portion of farmers who were contemplating a home in a new—and to them unexplored—country. Owing to an uncommon epidemic that has prevailed throughout all this region, my labours at the time were interrupted. I now propose, since the arrangements of a benign Providence in the elements of nature, have caused the influences of one season to neutralize the poison of another, to continue my communications.

In commencing with some advice to those about opening new homes, and other fields of labour in a new country, we would say in the first place, do not be too much under the influence of former experience and habits; they should have their influence with you here to be sure, but they should be regulated by circumstances.

CAB.—VOL. XL.—No. 7.

Before effecting a permanent location,—before you have squandered all your means, stop and reflect; take a good look around you—do not be in such haste as to fix yourself in a moment, for you have a great deal at stake, and when you are fixed, if you have made a bad bargain, it is not so easy a matter to extricate yourselves.

Now the first and greatest consideration to be kept in view, is to secure a healthy situation, so that yourself and family, and those around you may enjoy health; for health is one of the greatest blessings that Providence has bestowed upon us. Without health, life is scarcely enjoyed. In all new countries, a certain portion, or all, more or less, are subject to extremes of sickness and fatality. Many people, ignorant of the laws that govern human life, have had the hardihood to tell us, there is no difference between a river or a marshy situation, or a high and dry one for living. But we have noticed, from long observation and experience, that the foolhardiness of those people, finds its termination in premature suffering and death. In a word, the sickness of a new country is manufactured by local causes—rotten, decaying vegetable matter, which has been collecting in stagnant pools and marshes for centuries. Avoid all such locations, and flee from them as you would from the hydra headed monster. Do not look so much to the advantages of being near a market, or just such rich black soil, as to sacrifice your health. Secure then, a high and dry situa-

(201)

tion, remote from stagnant ponds and marshes. In the next place, pay but little attention to what strangers say to you; their object is speculation; have a mind of your own. Do not be fascinated with the notion of spending all your means in rich land, because it is cheap, for you will soon find that wild land will need extensive improvements before it will bring much money in return; and during the time you are improving your land, and fitting it to yield an income, you will find many necessary wants and requirements, that were never thought of in the old country. We have seen new settlers become hastily entangled in embarrassments and trouble, on account of spending every dollar of their means after arriving, before they had facilities for income. This, no doubt, was brought about by the luxuriant appearance of the country and soil,—these were so flattering, that the mind became absorbed in the contemplation of wealth which never could be realized. Another land mark which should elicit much solicitude to be avoided by the new comer, is those sharks that infest the borders of a new country, and who have learned by necessity and sad experience, to study plans of art to entrap the unwary traveller, in the guise of friendship. We have known many an honest man, who had toiled on with an accumulating family of children, just living from hand to mouth in an old country, and who by dint of industry, had hoarded sufficient to enable them to reach the far West, cheered with the expectation of obtaining a home to make his family comfortable, and crowning his years with happiness, soon stripped of every dollar, by a set of crafty speculators, who always are contriving to lay their bait, by flattering pretensions of friendship and plausible stories. Let the emigrant bear in mind that friendship built upon the calculation of dollars and cents, invariably turns out to be little better than enmity.

After this preliminary advice for the first and opening steps of a new comer, we will proceed to devise what should engage his attention in the way of cultivation and improvement. It has been a general custom from the early settlement of this country, for farmers to depend mainly for their income on raising wheat. The reason of this practice we cannot account for: it however is an error which every resident is aware of. Although the chemical principles of the soil are well adapted by nature for growing wheat, yet it is our opinion, founded on observation and experience, that the climate is too changeable to make wheat the staple crop of dependence. For nine years past we have only known three fair yields, or

crops, that would pay the farmer for his labours, including all the contingencies. The fault of depending exclusively upon the growth of wheat is, as we have already mentioned, the uncertainty and variability of the climate.

We have seen a hundred acre field of wheat, well sprouted, grow and survive the winter, in "living grain," and owing to the thaws and breaking up in the spring, together with the frosty nights, and heaving of the ground, during the months of March and April, to become so nearly killed, that not ten acres of the hundred were harvested.

So great a loss as this to farmers of limited means,—and by far the larger part are such in a new country—produces general distress and depression. This fact has been fairly demonstrated the past season. The wheat crop was cut off by rust and blight, so that no more than one-fourth of an average crop has been realized. This, together with the unusual sickness, produces *hard times*.

It has been remarked by some of our agricultural writers, that our farmers can afford to raise wheat for fifty cents per bushel. This is a great error; even if the yield was 20 bushels per acre, it could not be done, for obvious reasons. In the first place, the wheat harvest comes in equally, at once, through every section of country; it must be instantly secured or lost. But few have sufficient help within themselves to secure the amount grown. To hire cannot be done at present, as the country affords but few spare labouring hands that depend on hiring out for employment; the harvest wages are ten shillings per day, which, added to the threshing, cleaning, the cost of seed, and the transportation to market, say fifty miles to each man, taking the country through, the crop would all be consumed in expenses.

We do not intend to condemn the growing of wheat throughout the country entirely, by any means, for it is essentially necessary. The only system of farming that we think can be adopted with safety and prudence, to insure success and a prosperous and onward growth of the country, is the mixed system of farming. Indeed, the only sure way in this country, is for the farmer to raise as much as practicable of every thing within himself; and this constitutes the true mixed system. He should lay out to grow a portion of every kind of grain that can be made use of for his own consumption, which will invariably insure a portion, at least, of that which is most saleable to part with. For instance, if the corn crop should be abundant, and on that account bear too small a price to sell at a profit, he

should be prepared to fatten pork, which may pay well for the consumption and labour. At any rate, by following this plan, he will raise a sufficiency of one or other of the grains, either wheat, buckwheat, rye, barley, corn, or oats, for his own consumption and to part with, of that kind that may be the most saleable, and pay the best profit, to meet all his necessary wants and increase his revenue. Should it be that wheat demands the best price, then he can afford to live on the other grains and part with his wheat, or otherwise, if it should be that oats, corn, rye, &c., command the best price. Another advantage in this system of farming is, that neither of the crops will require to be planted or harvested at the same time; at any rate, they can be so arranged as not to crowd immediately upon one another in harvesting. Again, another great advantage in this kind of farming is obtained in the small, or manageable amount of his crops, so that he will be able to perform all the harvesting within himself, without the expense of hiring labour.

To carry out this system of farming, much attention must be paid to the raising and keeping of good stock of every kind. From the refuse of the crops, the straw, chaff, fodder, &c., can be fed a large number of animals, without any expense, which will almost be an entire gain. To clothe himself and family, the requisite number of sheep should be kept; for the purposes of milk, beef, and farm labour, a certain number of cows and oxen; and while he finds it necessary to appropriate a part for the consumption of his family, his stock is kept up from the progressive increase, and at the same time he is adding to his income, by the sale of butter, hides, tallow, &c.

We are already surprised at the facilities afforded to the farmer in the establishment of woollen manufactories; within a day's ride, the farmer can now take off his wool and exchange it for ready made cloth, at a much fairer advantage than he can manufacture it in his own family.

With a well ordered system of management, our country affords every advantage and encouragement for the prudent and industrious, to become the happy, prosperous, and independent freeman. While we are surrounded with all the blessings that nature can bestow, we cannot but stop and reflect on the suffering and death now witnessed in all Europe, by a large mass of her population. There we find a scarcity of the necessities of life, of which our luxuriant soil affords an ample supply.

A more befitting season than this, the commencement of a new year, cannot be

had, for us, who are comfortably situated at the warm fire-side, in the possession and enjoyment of those blessings, to extend with open arms those aids to suffering millions, that may result in a timely relief.

But humanity compels me to take another view of the evident suffering I see going on among the comfortable and independent farmers I have described. I mean the suffering of his cattle and animals. It is a notorious fact, known through all the West, that farmers that were, previous to coming to this country, kind and attentive to the comfort of their animals, become negligent and indifferent after residing in this country for a length of time. It is almost universally the practice to let neat cattle and sheep stand out, exposed to the blasts of the elements, through the coldest weather we experience. This practice is not only cruel but inhuman, and cannot be too strongly reprobated; for, with a few exceptions, there can be no excuse for it. Every farmer has a sufficiency of straw around him, together with other necessities for erecting good comfortable sheds, without any other expense than his own labour, which with little repairs will remain good for years. If this practice has become common from the influence of example, which we suppose to be the case, it gives but little credit to him that adopts it, for no prudent man will suffer himself to be influenced by bad example. Every farmer knows, or should know, that it is as much his interest to make his animals comfortable, as it is his duty and pleasure to promote the enjoyment of his own family; for it is upon them that his prosperity and means of living depend. No animal can thrive or keep in good plight, or yield any income, when it is continually pinched and frozen with the cold. It is a common complaint among farmers' wives that they get but little milk at this season of the year. Is the thing to be wondered at, when the cows are exposed to the pelting storms, and covered with sleet and ice, as we frequently see them?

In a future number we shall take up this subject again; in the mean time we hope the reader who may be interested, will reflect on what has already been said.

ANDREW STONE, M. D.

Crown Point, Lake co., Ia.
Jan. 12th, 1847.

A correspondent of the London *Morning Chronicle* recommends Egyptian beans as a nutritious and cheap article of food for the poor. The American beans are equally wholesome, and are free from dirt and weevils; while the Egyptian beans are apt to be foul.

Premium Farm.

We are glad to find our indefatigable friend Jones still in the field. The following letter to the committee on farms of the New Castle Agricultural Society, shows no diminution of energy, or confidence of success.

The report of the committee on crops, gives valuable information.—Ed.

TO THE COMMITTEE ON FARMS:

GENTLEMEN,—I again propose for the valuable premium offered by the Society for the best and most economically improved and productive farm, all circumstances and systems considered.

Wheatland is situated mostly in St. George's Hundred, New Castle county, Delaware. It is bounded on the North by the State road, which leads across the peninsula, from Reedy island, head of Delaware bay, to Town point, at the junction of Bohemia and Elk rivers; and on the West by the great Eastern Shore of Maryland road, which runs parallel with, and about 200 yards distant from the State, or what is known as Mason & Dixon's line.

Wheatland, in shape, is nearly a parallelogram; being something over one mile long from East to West, and a little over half a mile in width from North to South. The farm is all arable; not having any wood or other waste land on it. The buildings, which are not very good or convenient, are situated near the road, on the North side of the farm, and in a position about central from East to West. The land is gently sloping to the Southward, and the elevation, near the house, about eighty feet above the tide water. At present, the farm is divided into two grand divisions, by a lane of about one hundred and fifty yards in width, and running from the building upon the North side of the farm to the South, at which point it encloses the head of a branch of the Bohemia river, where there is a constant stream of spring water. This lot is designed to contain about fifteen acres; it is now well set with clover, timothy and orchard grass, and at present constitutes the only pasture for all my stock, except hogs. The stock consists of ten work horses and one colt, a yearling, and seven head of horned cattle, all told, from calves to milch cows, except two small beasts that I design killing off this fall. The two grand divisions of the farm are tilled to an imaginary line at present, running from East to West. The two North fields, or tillages, which are nearest to the buildings contain about eighty acres each. The Southern tillages, which are furthest from the building, about eighty-five acres each. The reason why the fields are

smallest near the house, is because my plan is never to haul manures a long distance whilst I have poor land near, and of course the small fields will fare best; the distant tillages, however, will get the best share of lime, clover, and plaster. The fields, or tillages, are now occupied and named as follows:

The North-west field I have called *West*, after that honest man and good farmer, W. West, the first that introduced the use of clover and plaster into Pennsylvania. This field is now sown with wheat, with Pennock's drill, upon one of the very best turned clover lays I ever saw. The field south of, and adjoining *West*, I have called *Garnett*, after that celebrated agriculturist that never would leave his native State, Virginia, notwithstanding the reported productiveness of the South-western States. This field is now in clover, near forty acres of which was sown after wheat, in 1845: the balance is sown upon oats last spring, the whole of which lies over without being pastured or mown, to be turned under next August for wheat.

Tull is the North-eastern quarter of the farm. About twelve acres of this field was subsoiled last autumn, preparatory to corn this season, after the manner of Jethro Tull, who may be justly styled the father of thorough tillage and drill husbandry. This field is partly—about forty acres—in corn; three acres are in timothy, which yielded a heavy crop the past year, for the tenth successive crop; the residue of the field is well set in young clover, that followed wheat. I am now engaged in cutting off this corn and carrying it in rows thirty yards apart, with the view of sowing wheat between the shocks of corn, to be followed by clover next spring. This plan I consider more profitable and less exhausting than the sowing of oats, formerly the usual course.

Skinner, so named after the oldest editor of our agricultural papers, and advocate of the rights of the tiller of the soil, the fourth tillage, is South of, and adjoining *Tull*, and is designed to contain about eighty-five acres. This field is now well set with clover, that followed the wheat that was taken from it last harvest. According to my system, this field goes in corn next spring. Of the amount and value of the product of the farm the present year, I am not now prepared to form an estimate, as I have not got out my wheat, which is my principal crop. The corn looks well; the oat crop was short; the grass very abundant.

The grounds upon which I claim the premium for the best farm, is from the system adopted—the improved and improving state

of the farm, with the economical mode by which it has been raised to its present fertility. That is, from an average of less than five bushels of wheat to the acre ten years ago, or in 1835-6, to an average of twenty bushels, its present annual average, 1846. This increased product has been made by an application of only forty bushels of lime to the acre, and not exceeding two entire crops of clover turned under. You will perceive I have adopted the four-field rotation. Wheat follows clover, corn upon wheat stubble,—no oats after corn,—but wheat sown amongst the standing corn, or otherwise the corn cut, and carried some thirty yards distant from each row, and then plough and sow with wheat. I much prefer this plan, as the wheat is not such an exhausting crop as oats, and besides which, the clover grows much better after wheat than oats. It is upon this tillage, or field of young clover, that I put my manure, which I generally haul out after I have done seeding with wheat, and before the corn is fit to gather. This I try to spread thin and evenly over the young clover; and the next August turn this clover, manure and all, under, as the best possible chance for wheat.

I have stated that I keep no more stock of horses or cattle than what is actually necessary to work the farm and to supply the family with milk and butter. I keep no sheep. This year I have thirteen head of hogs, which I keep up in a large pen; the meat of which I expect will cost me perhaps twice the market price, owing, probably, to the fact of my being too neglectful of them. I have not yet been able to get that breed of *hogs*, the manure from which will pay for their keep!

I have been led to this course—as regards the keeping a small stock of cattle—from the fact of believing that the over stocking the farms on this peninsula has tended much to the exhausting of the soil. I consider the over stocking with horned cattle, sheep, &c., as one of the four principal evils that have operated against this otherwise favoured section of country. The first of which was slavery, which makes the people lazy and careless; second, rum, which led to dissipation, and extravagance, and neglectfulness; third, the horned cattle, which eat off every vestige of vegetation, and left the land exposed to the scorching rays of the summer suns; and in winter they consumed all the straw and fodder of the farm. The fourth and last of these evils, is the want of a judicious government; one that would provide us with a steady home market for the products of our soil and toil; creating con-

sumers to use up the surplus products of our farms.

JOHN JONES.

Exhibition Grove, Stockford,
15th September, 1846.

THE COMMITTEE ON CROPS

Regret that farmers will not more generally report their crops, or compete for the valuable premiums offered by the Society. This apathy may arise, in part, from the fact that but few have, as yet, got out their wheat or oat crops; and also from the fact obtained from the most reliable sources, that the wheat crop is at least 20 per cent. short of the crop of 1845, both in Delaware and on the Eastern Shore of Maryland. Enough, however, is unofficially reported to justify the committee in believing that many crops, both of corn and wheat, have exceeded the standard for premiums, as adopted by this Society.

The Wheat Crop. The Mediterranean variety, as usual, has succeeded best. The late varieties have, in many cases, scarcely produced the amount of seed sown. The Washington and Etrurian varieties have also suffered much from fly, rust and scab.

The Oat Crop is also short of an average crop at least 20 per cent., although appearances, previous to ripening, indicated an abundant crop.

The Corn Crop bids fair to be a full crop in New Castle County, at least. Benjamin Webb has a lot, that, it is supposed by those who have seen it growing, will yield near one hundred bushels to the acre. It was planted on an old timothy and green grass sod, of six years' standing. The particulars of its culture, and amount of product, it is hoped will be furnished before the reports are published.

The Potatoes Crop. The early crop, we are sorry to hear, is affected by the rot, particularly when early dug. The crop is also represented to be short of an average one. It is hoped the late crop may be gathered in a sound state.

The Hay Crop has been abundant. Bryan Jackson reports over three tons to the acre, and is entitled to the premium for the best two acres, clover and timothy grass. The lot upon which it was grown was subsoiled a few years ago, and a heavy growth of sugar beet taken therefrom, after which wheat was sown, followed by grass.

Sugar-beet and Ruta-baga Crop. But few of either of these crops are grown in Delaware. Our farmers and dairymen have discovered that yellow corn meal and good clover hay, cut and mixed together, are preferable on all accounts.

The committee notice with regret, the exceedingly low prices at which our great staples, the wheat, oat, and corn crops, have ranged in the grain market of our Atlantic ports. At Baltimore, wheat has ranged at 50 to 75 cents per bushel, as in quality, during the most of July and August; corn from 40 to 55 cents; and oats from 18 to 23 cents per bushel—the freight, commission, &c., of four or five cents per bushel at the farmer's cost. Grain in the West has also been very low. At St. Louis, for several months, wheat has ranged from 30 to 50 cents; corn from 17 to 20 cents; and oats at about the same price per bushel. And at the town of Davenport, on the Mississippi river, corn would scarcely command 12½ cents per bushel. But within the last few days the price of grain has gone up a little, owing to the reports of the failure of the potatoe crop in Ireland.

JOHN JONES,
HENRY DU PONT,
BRYAN JACKSON,
JOHN SMITH,
JAMES N. CLELAND,
JOSEPH CARR.

Making of Cheese.

In conversation with one of the largest wholesale cheesemongers and provision dealers in the country, he suggested that there were two great faults of the American cheese, which somewhat prejudiced its sale in the English markets. He is a person in whose character and experience entire confidence may be placed.

He was pleased to say that he had cheeses from the United States as good as any he had ever seen, and that the general character of the article was greatly improved since the first importations.

But the first fault was the softness of the rind. It often cracked, and the cheese became spoiled from that circumstance. This he considered as owing to the cheese being too rich; if so, it is a fault which may be remedied. The English cheeses soon acquire a great firmness. I think proper, however, to add the directions of a most experienced and successful dairy farmer in respect to this matter. He says that the rind may be made of any desired hardness, if the cheese be taken from the press and allowed to remain in brine, so strong that it will take up no more salt, for four or five hours. There must be great care, however, not to keep it too long in the brine.

The second fault is the acridness, or peculiarly smart bitter taste often found in American cheeses. He thought this might

be due, in part, to some improper preparation or use of the rennet, and, in part, to some kind of feed which the cows found in the pastures. Both these matters are well worthy of investigation, and that alone can determine.

He was of opinion, likewise, that American cheese would sell better if it were coloured like the English cheese. The market for it was fast becoming most extensive.

In respect to American butter, he considered that which usually came here as a most inferior article. Much of it, I believe, is used in the manufacturing districts, solely for greasing machinery. Salt butter, or butter strongly salted, is not saleable in the English market; and especially the salt must not appear. I cannot doubt however, that presently some of our best June or September butter, put up in lumps, would find a good market here,—if, in truth, we have any to export. The very best fresh butter in London market, however, does not bring so high a price as I have often paid for the best article from the county of Worcester, in Boston market; and I have frequently known the best butter to be sold in Baltimore, and even in Cincinnati market, for half a dollar; a little more than two shillings sterling per pound.

I have seen in England none of the admirable *spring-houses* which are to be found in Pennsylvania.—*Colman's Tour.*

HOW TO DECOY AND DESTROY ANTS IN DWELLING HOUSES.—When practicable, place as near the end or passage on a level, a basin or bowl filled with dry mould; then put a bone or bones of fresh meat in the bottom—such as are discarded from the dining room. You will soon find your tormentors congregate thousands strong; for I assure you they are first-rate bone-polishers. Forty years ago, when a boy, whenever I wanted a particular bone of a duck or goose polished, I always found the ant-hill the best manufactory. Have in readiness a strong solution of boiling salt and water, and when you perceive your enemies begin to retreat, cover them with it. Salt and water cold will destroy them poured into their haunts; but the better way is to decoy them out of their strongholds. It will be good policy to wash out the basin or bowl, and fill it with fresh mould previous to a second decoy, as it will be perceived salt is not a favourite.—*Gardener's Chronicle.*

THE imports of tea into the United States from China, during the years 1845 and 1846, were respectively, twenty and a half millions, and eighteen millions of pounds.

The Reading Rail Road.

A BRIEF history and description of this great public work may prove interesting to the citizens of Pennsylvania as well as the public generally, of more distant communities, whose only ideas of the road, are confined to the weekly reports of its immense business.

The rail road was projected in 1833, a charter obtained in 1834, surveys made the same year, and forty-one miles put under contract and construction in 1835.

It was originally designed for its present purpose, an outlet or avenue to market, for the Schuylkill coal region; but its first charter extended only to the Borough of Reading, fifty-nine miles from its terminus on the Delaware river, near Philadelphia; as the right of constructing a rail-road between Reading and Port Clinton, twenty miles, had already been granted another corporation, "The Little Schuylkill Rail-road Company," terminating at the latter point. From insufficient means, this Company was unable to extend their road, and yielded their Right and Charter to the Reading Rail-road Company, which with a further extension of their Charter, beyond Port Clinton to Pottsville, went into an active prosecution of the whole work, from Pottsville to the Delaware, ninety-three miles, under one charter, now known as the Reading Rail-road.

Every Pennsylvanian is familiar with the great embarrassments to the business of the country, checking commercial enterprise, disastrous to every branch of industry, and fatal to public and private credit, during the period from 1838 to 1842. Notwithstanding all these difficulties, the friends of this Road pushed steadily on with its construction, taxing their energies, their means, and their credit to the utmost, to insure its speedy completion; and on the first day of 1842, the first locomotive and train passed over the whole line, between Pottsville and Philadelphia.

From that date to the present, its business, its revenue, and its credit, have increased in a degree scarcely paralleled by any similar improvement, until its tonnage and its receipts are measured, as at present, by millions.

Two continuous tracks of railway extend the whole distance of 93 miles, from Mount Carbon, near Pottsville, to the Delaware river; three miles above the heart of the city of Philadelphia; with a branch also laid with a double track, one and a half miles long, connecting, by the State Road, with the principal business street of the same

city, for the passengers, merchandize, and city coal business. The rail used is of the H pattern, with both top edges alike; and weighs 45½, 52½, and 60 lbs. to the yard; the lightest having been first, and the heaviest last used. A few tons of other rails, purchased before a further supply of the pattern adopted for the road could be obtained in England, and varying from 51 to 57 lbs. per yard, are also in use.

The track is laid in the most simple manner, the lower web, or base of the rail, being notched into 7 by 8 white oak cross sills, and these laid on broken stone, 14 inches deep and well rammed. This method is found admirably calculated for the enormous tonnage of the road, being rapidly and economically repaired and replaced, securing a thorough drainage, and preserving its line and level true, at all seasons of the year.

The *grades* of this road are the chief elements of its success in revolutionizing public opinion, on the subject of the carriage of heavy burdens by railway. From the most important branch, Coal-feeder of the road, at Schuylkill Haven, to the Falls of Schuylkill, a distance of 84 miles, the grades all descend in the direction of the loaded trains, or are level; with no more abrupt descent than 19 feet per mile. At the Falls, an assistant locomotive engine of great power pushes the train, without the latter stopping, or any delay, up a grade of 42½ feet per mile, for one and four-tenths miles, leaving it on a descending grade, within four miles of Richmond, whither it is readily conveyed by the same engine which started from Pottsville, never leaving her train.

The bridges on this line are of great variety, in plan, and material of construction, stone, iron, and wood. The most perfect and beautiful structure on the road, if not in the State, is a stone bridge over the Schuylkill near Phoenixville, built of cut stone throughout, with four circular arches, of 72 feet span, and 16½ feet rise each, at a cost with ice-breakers, of \$47,000. There are 75 other stone bridges and culverts, varying from 6 to 50 feet span; all of circular arch, spanning water courses, branches of the Schuylkill and roads. There are seven bridges from 25 to 38 feet span each, built of iron, trussed after the "Howe" plan, with wrought iron top, and bottom chords, wrought iron vertical ties, and cast iron diagonal braces. These bridges are stiff and light, and present a very neat and handsome appearance. As, however, the flooring is of wood, and therefore liable to decay and accident, they have only been used where the width and depth rendered stone bridges impracticable; the latter being always used in

replacing wooden structures, wherever it was practicable. There are twenty-two long wooden bridges varying from 41 to 160 feet span, built on various principles, chiefly of lattice work, assisted by heavy arch pieces. Of this latter description, the bridge over the Schuylkill at the Fall, is a fine specimen. It is 636 feet long, consisting of four spans of 134, two of 152, and one of 160 feet above the river. There is one bridge built on Burr's plan, with double arch pieces of 149 feet span; and one on "Howe's" plan, 156 feet span, also assisted by arch pieces. Besides the above, there are twenty-eight wooden bridges of short spans, from 14 to 39 feet, built of King post, Queen post, "Howe's truss," and joists.

There are four tunnels on the road. The longest of these is near Phoenixville, 1984 feet long, cut through solid rock, worked from five shafts and two end breasts; deepest shaft 140 feet; size of tunnels, 19 feet wide, by 17½ high; total cost, \$153,000. Another tunnel at Port Clinton, is 1600 feet long, worked from the two ends only; material, loose and solid rock mixed; 1300 feet are arched; depth below the surface of the ground, 119 feet; total cost, \$138,000. The Manayunk tunnel is 960 feet long, through very hard solid rock, worked from two ends; depth below surface 96 feet; total cost, \$91,000. Another tunnel under the grade of the Norristown rail-road, and through an embankment of the latter, is 172 feet long, formed of a brick arch, with cut stone facades.

The depots on this road are all substantially built, but with a view to use, rather than ornament. At Schuylkill Haven, three miles from Pottsville, is erected a spacious engine house, round, with a semi-circular dome roof, 120 feet diameter, and 96 feet high; with a 40 feet turning platform in the centre, and tracks radiating therefrom, capable of housing sixteen second class engines and tenders. At Reading are located the most complete, extensive, and efficient workshops and rail-road buildings of every description to be found in the country. The Company's property covers here, besides the rail-road tracks, 36 acres, the greater part of which is already in use for the various operations required to keep this vast machine in life and motion. The main machine shop is 159 by 70 feet, filled with the most valuable tools and machinery, all made, with the exception of three or four lathes, in the Company's workshops, by their own mechanics. Other machine shops, one 87 by 40 feet, are used for fitting iron and brass exclusively.

The iron foundry is 164 by 32 feet, with

two cupolas. The largest blacksmith's shop is 121 by 31 feet, 57 smith's fires being in daily use on the works, all blown by fans driven by steam. The main carpenters' shop is 140 by 46 feet, with a pattern shop in the second story.

The iron coal cars, tenders, and smoke pipes are made and repaired in a shop 123 by 83 feet.

A merchandise depot just completed, is 124 by 84 feet, to accommodate that rapidly increasing branch of business. About a mile below the Reading depot, where the rail-road is nearest the river, most efficient water works have been lately constructed, consisting of a reservoir on the Neversink Hill side, 51 feet above the rails, holding 700,000 gallons of water, supplied with a force pump worked by a small steam engine. Attached to this station are also two separate tracks, with coal chutes beneath, 300 and 450 feet long each, for the use of the town; two wood and water stations; a small portable steam engine for sawing wood, a refreshment house, for crews of engines stopping to wood or water; a brass foundry, passenger car house, passenger rooms, offices, &c., &c. All the machinery of the main shops and foundry, is driven by a very handsomely finished stationary engine, with double cranks, of 35 horse power, built entirely on the works.

At Pottstown station, 18 miles below Reading, extensive and efficient shops have also been erected, chiefly for work connected with the bridges and track of the road, and new work of various descriptions. The principal shops here, are 151 by 81, 101 by 41, and 81 by 44 feet. The first shop is covered with a neat and light roof, built of an arched "Howe truss," forming a segment of a circle, 78½ feet span by 16 feet rise.

At Richmond, the lower terminus of the road, at tidewater on the river Delaware, are constructed the most extensive and commodious wharves, in all probability, in the world, for the reception and shipping, not only of the present, but of the future vast coal tonnage of the railway; 49 acres are occupied with the Company's wharves and works, extending along 2,272 feet of river front, and accessible to vessels of 600 or 700 tons. The shipping arrangements consist of seventeen wharves or piers, extending from 342 to 1,132 feet into the river, all built in the most substantial manner, and furnished with shutles at convenient distances, by which the coal flows into the vessel lying alongside, *directly from the opened bottom of the coal car in which it left the mouth of the mine.* As some coal is piled or stacked in winter, or at times when its

shipment is not required, the elevation of the tracks by trestlings, above the solid surface or flooring of the piers, affords sufficient room for stowing 195,000 tons of coal. Capacious docks extend in shore, between each pair of wharves, thus making the whole river front available for shipping purposes; ninety-seven vessels can be loading at the same moment, and few places present busier, or more interesting scenes, than the wharves of the Reading rail-road, at Richmond. A brig of 155 tons, has been loaded with that number of tons of coal in one hundred and thirty minutes, at these wharves.

A very convenient and neat Engine house, has lately been erected at this station; it is of a semi-circular shape, with a forty feet turning platform in the centre, outside; from which tracts radiate into the house, giving a capacity for 20 engines and their tenders of the largest class, the building being 302 feet long on the centre line, by 59 feet wide. It is built in the simple Gothic style, the front supported by cast-iron clustered pillars, from the tops of which spring pointed arches, and the whole capped with turretted capping. Immediately adjoining, are built spacious machine and work shops, for repairs of engines and cars, all under one roof, 221 by 63 feet. A visit to this chief outlet of the Pennsylvania coal trade, will give the best idea of its magnitude, and of the various branches of industry connected with it.

The business of this road requires a large amount of running machinery. The latter consists of seventy-one locomotive engines and tenders, including five in constant use on the lateral rail-roads in the coal region; 3,020 iron and 1,539 wooden coal cars; 482 cars for merchandise and use of road, and seventeen passenger cars.

The engines vary from 8 to 22½ tons weight; two very powerful engines, of 27 tons weight each, are used exclusively on the Fall's grade, before mentioned. The iron cars weigh two and four-tenth tons empty, and carry five tons of coal. The average load of each engine, during the busy months of the year, is about 410 tons of coal, of 2,240 lbs. The cost of hauling coal on this road, is about 35 cents per ton. Freight on merchandise, 75 cents per ton, and passengers 41 cents each, through. Its grades have chiefly secured this great economy in transportation.

The total length of lateral rail-roads connecting with the Reading rail-road, under other charters and corporations, but all contributing to its business, using its cars, and returning them loaded with coal and merchandise, is about ninety-five miles. Some

of these rail-roads are constructed in the most substantial manner, with the best superstructure at present used in the country.

By the monthly reports which have been made of the business of the Company, it appears that the receipts from Dec. 1st, 1845, to October 31st, 1846, have been \$1,707,312 25. The receipts for the remaining month of the fiscal year, which ended Nov. 30th, 1846, will be sufficient to swell the gross receipts to about \$1,900,000.

In the last Annual Report, the managers estimated that the gross receipts would be, for the same period, \$1,725,000. From this statement it appears, that unless the expenses vastly exceed the estimate given in the same report, the result of the year's business will prove very gratifying to the stockholders.

Our colliers have now to congratulate themselves on having between their mines and tidewater, two transporting works by land and water, unsurpassed by any other rail-roads or canals in the world. It remains for them by a firm and prudent course to secure to themselves and their customers, the full and free use of both these works, untrammelled by the quarrels or jealousies of either.—*Miners' Journal*.

Good Housewifery.

OUR good friend SKINNER, of the *Farmers' Library*, often holds a pen that "shys," as we sometimes say of a horse that does not stick to the track. The high blood of the one and the overflowing mind of the other, that is continually impatient for opportunity to vent itself, make them look at every thing on the road, whose shadow they can catch a glimpse of, and hence it is that our friend's descriptions we find not only highly instructive in themselves, but enlivened with digressions that seem determined to give one a chance to be wise, whether or not.

In a memorandum of a *breakfast-table conversation* with B. A. Hall, at whose post, in the neighbourhood of Lebanon Springs, our said friend had "hung" up his horse the evening before, and engaged a glass of fresh buttermilk for the morning, we have a variety of items in the farm management of his host, as well as a glance at the thorough inside cleanliness and comfort of his hostess. He breaks away into the following remarks, which we cannot omit to throw before our own readers.

The farm of B. A. Hall, by the way, consists of two hundred acres, one hundred and eighty of which are arable. His staples are butter and pork. Of the latter he sells some fifteen thousand pounds, of the former about four thousand pounds. His average number of cows is twenty-two, and he sends a great number of pigs to the Boston market. He certainly appears to be a very successful farmer; and the great secret of this success is doubtless revealed in the single fact, that

he helps to milk his own cows! But to the remarks we promised, which are taken from the last number of the *Library*.—Ed.

Who can avoid—for the life of us we never could—on entering a dwelling, the true province and dominion of a good housewife, from slyly casting around to see how things look in *her department*—whether the windows are washed, paint scoured, hearth cleanly swept up, cupboard neatly arranged, mantle and chairs and chair-boards dusted, cobwebs not a speck to be seen—all, all “set in order,” and neat and clean “as a bandbox?” But, gentle ladies, even all that, let us warn you, does not satisfy the judgment of men who, while they may closely scrutinize your housewifery, entertain, as we profess to do, the highest possible respect for the important, the noble station which Providence has assigned you in the eyes of all men of sense, and which honour and duty alike enjoin upon you to *fulfil*, with care and with pride, whatever, whether high or low, may be your rank or fortune; but, if possible, with more obligatory force and necessity in the country than elsewhere.

Too well are all men of observation aware that all is not gold that glitters—the fairest looking apple is sometimes rotten at the core. The hall, the parlour, the show-rooms, and all apartments in common view, may indicate *minute* attention and good taste on the part of the mistress, whose eye is best of all brushes; and yet, as it sometimes happens, the chambers of such a house may be the receptacles of filth—the cellars the convenient repository of every offal—the kitchen the scene of waste, and lounge of every idle loafer about the place—the dairy be poisoned with the bad odours of superfluous moisture and half-scoured utensils. We have seen such establishments with disgust; but much more doth it rejoice us to say, that we have known and enjoyed establishments (when we had one to enjoy) where “the lady of the house,” like the truly brave soldier who, when roused at midnight, springs at once to his arms, ready to do battle—so can such a woman, in proud defiance of the strictest scrutiny, take husband or stranger by the light of the lamp or the light of the sun, by day or by night, from the garret to the cellar—open every closet and every drawer—demand, “Where do you find, in *my department*, a pin or a feather out of place, a mickle of waste, or a garment without a button?” But, to achieve all this, she should have all *needful* help. Such only is the woman who deserves the name of a good housewife; but he who possesses her possesses a treasure of inestimable value, and had indeed must be his own management if,

with her thrift and her example and encouragement, he fail to thrive. “*She looketh well to the ways of her household*, and eateth not the bread of idleness.”

Bone Dust—Super-phosphate of Lime.

It has long been known here, that a dressing of bone dust is considered almost essential in England to make a turnip crop; and that it is also extensively used for other purposes. Here—we mean more particularly in the vicinity of Philadelphia—bones applied as a manure, are but in poor repute. We have heard many farmers say they have used them without any beneficial effects whatever. In some parts of Delaware and Maryland however, they are used to good purpose. Why should there be this difference in their effects in different locations? While we are seeking them out of the country, why should the English farmer be seeking for them three thousand miles distant? Doubtless it must be owing to the difference in climate—in soil, and in the mode of application. In England, the climate is very much more moist than ours, and therefore more favourable to their use. In our high dry soils, where there is a scarcity of acids, the bones in their natural state, can not be expected to act favorably, inasmuch as they are very insoluble—or in the language of Spooner in his Prize Essay—extremely indigestible. Now it seems to us, that an exceedingly interesting and valuable hint, of altogether a practical character in relation to this matter, may be gathered from the following remarks, taken from the last number of *Coleman's Tour*.

Let us avail ourselves of every means to retain on our soil, the thousands of tons which we have long been in the practice of exporting, to add to the annual fertility of England's fields. Let us rather make the article available for ourselves, and export the eatable material.—Ed.

Bones, broken and ground, have been a long time employed as manure in England, and with wonderful efficacy. Indeed, the extraordinary improvements in some parts of the country have been wholly ascribed to the application of bones. It was found, likewise, contrary to all expectations, that bones which had been through the hands of the soap-boiler, and from which all the animal and gelatinous matter had been thus abstracted, and that even bones which had been calcined, were of equal efficacy with those which were applied in a green state, and fully charged with animal matter. It was also ascertained that bones applied as a manure, beyond a certain point, were not efficacious in proportion to the quantity applied; and that sixty bushels of bones to an acre, produced no more beneficial effect than sixteen or twenty. Here experience and inquiry were confounded, and here science came triumphantly to their aid.

Upon examination, it was ascertained that what gave the efficacy to bones was the phosphorus contained in them, connected with an acid. It was not ascertained that the animal portion of the bones was of no importance; but it was slower in its effects, in ameliorating the soil, than the inorganic portion of the bones; and that what was mainly important, in the application of bones, was to supply this inorganic portion in a form that it should speedily be taken up. In an ordinary state, this phosphorus was combined with lime, in such proportions that it was not easily dissolved: but, Professor Liebig, to whom agricultural science is so greatly indebted, discovered that, by the application of sulphuric acid to the bones, a portion of this lime would be abstracted, and go into another form; and a salt would be left containing a much larger proportion of phosphorus,—and so called the *super-phosphate of lime*,—which was soluble in water, and would be at once taken up by the plant.

"Phosphate of lime is a substance very difficult of solution: and thus, in a very dry season, the effects of bones are slight and imperfect. Super-phosphate of lime, on the other hand, is extremely soluble, so much so that the vitriolized bones can be entirely dissolved or suspended in water, and thus applied. This at once explains the cause of the valuable properties of the preparation. The bones in their natural state are extremely indigestible; the acid cooks them—converts them into a species of soup, which can readily be eaten and digested by the young turnips. The adamantine fetters, with which the various elements composing bones are bound so compactly together, are by means of this new agent burst asunder—the compact is broken, and each constituent element is left to pursue its own course, and exercise its own natural affinities."

The effects of this preparation of the bones has answered every expectation; and where before sixteen and twenty bushels of bones were applied to an acre, in the growth particularly of turnips, four bushels, prepared with sulphuric acid, are found now to be even more effectual. The advantages of such a preparation are very great,—first, in stimulating and forwarding the growth of the plant; next, in the cheapness of the application; and next, in its so forcing the plant, as soon to place it beyond the reach of the fly, which never attacks it after the third leaf is formed.

The best mode of preparing the manure has been matter of various experiments, and deserves inquiry from the acrid nature of the acid employed—the oil of vitriol. Mr. Pusey advises, to erect a heap of fine mould, and, forming a basin or crater in the centre, to place the amount of bones to be dissolved in it, and to apply gradually an amount of sulphuric acid equal to half the weight of the bones, which, after a short time, will completely dissolve them; and then, shovelling and mixing the mould together, the manure will all be in a condition to be distributed by a machine in the drills prepared for sowing the turnip seed.

Mr. Tennant, of Shields, one of the best farmers in Scotland, puts twenty-five bushels of bones into three old iron boilers, and next pours in two bottles of acid, containing one hundred and seventy pounds each, and adds eighteen gallons of water to each boiler. In a day or two they empty the contents of the boilers into two cart-loads of light mould, with which it is thoroughly intermixed; and, being turned over three or four times, after seven or eight weeks the compost becomes dry and mealy, and can be spread by the hand.

Mr. Spooner advises to place the bones in a hogshead, and pour the acid upon them at the rate of one third of the weight of the bones in acid, that is, to one hundred and eighty pounds of bones sixty pounds of acid; and, after it becomes sufficiently dissolved, to mix it with ashes, and apply it in that form. He recommends, likewise, that, first of all, the acid should be mixed with one fourth of its weight of water, or perhaps half as much water as acid, which will raise it to the temperature of 300° Fahr., and will much assist the dissolving process. Too much care cannot be taken to guard against the effects of the acid upon the clothes or skin of the operator.

The beneficial effects of this application are now beyond question. Mr. Spooner cites a case in which two bushels of vitriolized bones, with ashes, gave as good a crop as sixty bushels of bones unprepared. To Swede turnips it seems more congenial and efficient than to white turnips. Where the crop of turnips is of so much importance as here, this discovery is of immense consequence. Whether it will be equally beneficial to other crops,—to wheat or grain crops,—is to be decided by further trials. The experiments reported by one farmer, in reference to a crop of carrots the second year after its application, and to a field sown with barley one year after its application, showed most decidedly, so far, its permanent beneficial influence.

*Spooner's Prize Essay. Journal of the Royal Agricultural Society, vol. vii. p. 1.

For the Farmers' Cabinet.

Improvement in Axles.

I have believed that an advantage would result from calling the attention of your numerous readers, to an improvement in AXLES, which has recently been invented, and which in my humble opinion, is likely to form a new era in wagon, and carriage making. The inventor, Isaac Slack, of Avondale, Chester county, Pa., has secured the invention by letters patent; and although from the very liberal views of some, we might infer that they would disapprove this course,—yet the decided advantages likely to result from the improvement, and the circumstances under which the discovery was made, render in the view of his friends, an ample apology for this course.

I will here briefly refer the reader to some of the advantages claimed by the inventor for this construction. And although there is here and there a chance individual, who, from prejudice, or from other motives, very difficult to appreciate, will strenuously oppose the introduction of this improvement—yet I firmly believe, that every man who has fairly examined it, is in candour compelled to yield the validity of these pretensions.

1st. The friction is much lessened. The axles revolve with the wheels; each wheel having its separate axle or spindle extending to the centre of the machine; thus the leverage of the spindles is equal to half the length of the *ordinary* axle, or about two and a half feet, instead of six to twelve inches, as is generally the case. So that by this contrivance, the *bind*, or *friction* on the spindles, occasioned by sideling ground, or side motion, is diminished to less than one sixth part of that exerted in the common hub.

2nd. The noise and waste of oil, occasioned by the *play* of wheels hung by the usual method, is entirely avoided; for by this improvement, they may at all times be kept free, yet so tight as to make no noise in running.

3rd. All dust or sand is effectually excluded from the boxes.

4th. A wagon constructed on this plan, may be oiled at any time, whether loaded or empty, by the simple process of pouring it in from a can.

5th. The oil having no access to the out end of the hub, a disagreeable collection of grease and dirt is avoided, and a neat and graceful finish introduced in its stead.

6th. The hub is of cast iron, and subject to no friction, and is therefore almost imperishable. The mortices may be made

larger and the spokes driven tighter, than can be done in wooden ones; and the tenons of the spokes are effectually protected from the oil; thus making a stronger, and much more lasting wheel.

These are undoubted advantages, which combine in this new construction, to form a *compact, simple, neat, and durable* machine. I will here add for the satisfaction of any reader feeling an interest in this matter, that several carriages and wagons of different weights, are in use, and being made by the inventor in his vicinity; and a reference to which will I trust satisfy any one that the above is in no wise too highly wrought.

A FRIEND TO IMPROVEMENT.

Chester co., Pa., Feb. 4, 1847.

HINTS TO FARMERS.—The farmer's life is shunned by many because it seems one of mindless drudgery. It ought not so to be. If our farmers would study and reflect more, they might do less hard labour, and yet accomplish more in the course of a year. Ten hours' work in summer, and eight in winter, ought, with good management, to give any man a good living. He who works so hard that he cannot read or reflect after the labours of the day are over, because of fatigue, does not plan wisely. Let no man shun work when work is to be done; delve, delve, forever, is not the end of man's life. The farmer's evenings should be devoted to mental acquirement and rational enjoyment. To sup and tumble into bed is a hog's fashion, and highly injurious to health. But let a farmer have about him the choicest works of his own auxiliary avocations; let these form the subject of study and conversations at least two evenings in a week, while the newspaper, the newest and oldest volume, each have their allotted seasons. Two or three dollars, contributed by each family in a neighbourhood or district, would go a great way in the purchase of standard books at modern prices. These are but hints which each reader will modify as his judgment shall suggest. I plead only for the essential thing of making home pleasant, and its hours of relaxation, hours of instruction also.

H. GREELY.

PLANT TREES.—Plant trees every where, we say: let them shade our streets, and grow wherever there is room for them. Especially plant them in the country, where open fields will admit, and be sure that in the end they will surprise the planter by their growth whilst he and his children are sleeping! In evidence of this, let us quote an anecdote to the purpose. It is related of a farmer in Long Island, that he planted an

ordinary field of fourteen acres, with suckers from the locust (a native of this country) in the year of his marriage, as a portion for his children. His eldest son married at twenty-two. On this occasion the farmer cut about fifteen hundred dollars worth of timber out of his locust wood, which he gave to his son to buy a settlement in Lancaster county. Three years after he did as much for his daughter. And thus he provided for his whole family; the wood in the mean time repairing by suckers all the losses it suffered.—*Boston Transcript*.

For the Farmers' Cabinet.

Surplus of Salem County.

THE following statement compiled by Robert G. Johnson of Salem, for the Historical Society of New Jersey, showing the large amount of surplus produce obtained from the soil of Salem County, during the year 1845, over and above the amount consumed, I extract from the National Standard of Salem. The extent of the County is only three hundred square miles, and the number of inhabitants 16,024 in 1840; since that time there has probably been some increase.

Exports of Salem County for the year 1845:—

Wheat,	68,919 bush.	90 cts.	\$62,027.10
Corn,	386,254 "	50 "	193,127.00
Oats,	174,574 "	31½ "	54,117.94
Buckwh't,	6,000 "	60 "	3,600.00
Rye,	2,322 "	60 "	1,392.00

Amount, 688,069 \$314,264.04

Hay, straw and brooms, 28,400.00

Meat of various kinds, 83,325.00

Grass seeds, 17,500.00

Truck and fruit of all kinds, 67,975.00

\$511,464.04

Ship timber and productions of the forest, more than 200,000.00

Total exports, \$711,464.04

The corn crop of the year 1846 has been perhaps the heaviest ever grown in Salem County, and the oat crop much heavier than in 1845. The surplus for the year 1846 will probably reach near a million of dollars, and the productions are rapidly on the increase.

D. P.

Salem, N. J.

We have long known Salem County, as among the most prolific in New Jersey. With abundance of tide meadow; a soil easy of tillage and naturally good, the farmers have made large quantities of manure, which has brought up their lands to a high state of productivity. The facility of obtaining lime, and the

free use of extensive marl beds, have also been seized upon and improved till the surplus of her soil amounts as we see above, to nearly four dollars per acre: or, deducting the amount of timber, to something less than three dollars. The aggregate spared from this small County, seems large, especially to us who know that no inconsiderable portion of it is still unimproved by tillage: but we believe that Salem County need not, and that she will not, stop short and be satisfied with this aggregate:—let her double it,—and when that is done, she may shake herself to further exertion, and double it again.—Ed.

For the Farmers' Cabinet.

Mildew.

THE following opinions on mildew, gathered from various sources, and modified by my own observations, I offer for publication. Mildew is a parasitic fungus growing upon the culms, sheaths and leaves of grasses, particularly wheat. Plants of the large sub-class *fungi*, are many of them very minute, and vary so much from other plants in their growth and fructification, that some persons doubt their organization as vegetable bodies: and the mildew or fungus, growing on wheat, being one of the minute fungi, not capable of being examined well, except under a high magnifying power, it is by many believed to be an exudation of the sap from the stalk, arising from disease.

The office of plants of this class, seems to be to hasten the destruction of vegetable matter; for from the time that the energies of vegetable life decline, until the body has been nearly reduced into its elements, some of the many species of fungi, are engaged in the work of destruction, if in situations favourable for their growth and production; but when the principle of life in vegetables, is vigorous and healthy, the fungi seldom succeed in obtaining a place upon them. That plants of this class will grow, and that they can be cultivated and propagated, if not by true seed, yet by their sporules, or by parts of their substance, may be shown by the culture of the common edible mushroom, *Agaricus Campestris*, a fungus of sufficient size for examination—this mushroom is raised by the gardeners for market, with about as much certainty as other vegetables, by introducing the spawn or gills of this species of mushroom into a bed of earth and manure properly prepared; for a description of the process, see *McMahon's Gardening*,*—"Kitchen Garden in October." Another instance may be made the subject of experiment. The mouldiness sometimes found on bread, is a fungus; take two pieces of bread not sufficiently baked, put one of

*See also *Farmers' Cabinet*, vol. 10, page 29.

them in a clean cupboard, in which there is no mouldiness, in the summer season—and put the other at the same time in a similar place, but near or in connection with a piece of mouldy bread; it will be found that the mouldiness will be sooner and more abundantly communicated to the latter. That both will become mouldy at length is true, because in the season that this fungus will grow, its sporules will be conveyed by the atmosphere in small quantity, but the mouldiness will be completed much sooner when the sporules are furnished at first in quantity.

In plants that flower once, bear seed, and die, including annual and biennial plants, of which wheat is one, the vital energy begins to decrease shortly after the formation of the seeds and before its ripening; the absorbents of the root cease to draw any support from the earth; the lower part of the culm or straw, becomes ripe, rigid and sapless, whilst the upper part remains of a green colour, and full of juices, which pass gradually from below upward, into the ears or seeds; the straw gradually ripening upward, as the sap in the straw goes, (probably by capillary attraction) to perfect the grain.

The mildew is frequently found upon wheat before, or at the time of flowering, when the stalk and sheath being in a vigorous growing state, do not suffer from it, and it obtains no hold upon them; but the leaves, having fulfilled their purpose, are weak and become mildewed; the only damage is, that the sporules are remaining on the dead leaves in such quantity as greatly to peril the crop, if circumstances favourable to their growth should take place, when the straw becomes weakened before ripening, and I very much doubt whether in any case, a field becomes entirely discoloured with mildew in half a day as sometimes happens, except the leaves and sheaths, had been mildewed previously.

The particular fungus called mildew in England, has been figured and illustrated by Joseph Banks, President of the Royal Society, by coloured plates much magnified, showing its growth, form, action and development, and exhibiting the insertion of its root-like appendages among the vessels of the culm—this work, an octavo of a few pages, I have not seen for years; and it is probably scarce. It is in the Philadelphia Library, No. 3759.

I do not remember the name given by Banks to the species described, but I believe we have two species known as rust or mildew. I have not examined them for some years, having given up microscopical ex-

aminations, except in cases of great necessity. I find in Eaton's manual of Botany, two species marked as rust; viz. *Puccinia graminis* and *Uredo linearis*.

For the production of mildew on wheat, it is necessary—1. That the growth of the wheat through age, poverty, or disease, be weak and not vigorous.—2. That the sporule or seed of the mildew be present.—3. That from rain, or heavy dew, so much moisture be present as will enable the sporule to adhere to the culm.—4. That the heat be sufficient for its growth. When all these circumstances are present, the growth of the mildew on the straw is rapid, as the colour of the straw is changed in a short time—but several hours elapse before the root-like processes of the mildew, inserted between the plates and tubes of the culm, are so large as to compress the vessels of the culm and prevent the ascent of the sap. As an evidence of this, it will be found possible to clean the straw by rubbing or washing. But after a short time the root-like processes, force themselves through the plates and tubes of the straw, preventing any movement of the sap. The stalk retains its green colour, and does not ripen—the grain receives no further addition from the sap—the soft part evaporates and shrivels—and the injury seems to be nearly irreparable. The only mode of relief that I have heard proposed, is to cut the grain immediately when dry, bind it up, put it in close shocks, and let it stand till dry. I have tried this twice, and can only draw upon my memory for the result, once with partial success, and once without any: the weather succeeding being not entirely dry. I still believe, that if the straw and grain were clear of any wet except the sap, and the process of cutting and shocking carefully done, and the weather should remain dry for a week, that the wheat would ripen, and it is well established, that no advantage is obtained by letting it stand uncut after being mildewed. We can easily conceive, that if the mildew is a fungus of the nature of a mushroom, the close compression in the sheaf and the exclusion of light and air, may destroy it; and when that is done, the compression on the culm may cease, and the attraction of the sap to the head be resumed. It is now known that Indian corn cut before it is entirely ripe, and put in shocks, continues to ripen for a considerable time.

The poisonous nature of many species of fungi—their action on the salivary glands, and the suddenness of their appearance, lead me to suspect that the slaving of horses

at pasture, in some seasons, is owing to this or some other species of fungus on the grass.

A belief has long existed in this country, and in most countries of Europe, that wheat growing near to a barberry bush—*Barberis Vulgaris*—is liable to blight or mildew, and I have for years suspected, that a fungus usually found on the barberry, appearing like a black speck on the smallest branches, is the same that is found on the wheat. It would give me much pleasure if some person fond of microscopical observations, would examine it, and prove the truth or falsity of my suspicion.

If the foregoing views are correct, the means of preventing mildew upon wheat, so far as it can be prevented, will be those that shall cause a healthful and vigorous growth, of which suitable and sufficient manures, draining and culture, are the most effective—and no land should be sown without such culture and manure—for if a part of the crop should become so weak as to be mildewed early—then the sporules or seeds thence derived, are always ready to be placed in destructive activity, when the other circumstances are favourable thereto.

ALAN W. CORSON.

Montgomery co., Pa.,

For the Farmers' Cabinet.

Large Hogs of the Chester Co. breed.

TO THE EDITOR,—In a letter received from my friend John Worth, Jr., of Chester County, he gives the following account of the weight of four hogs recently slaughtered, raised and fed by Moses S. Carpenter, a neighbour of his:—

The largest barrow,	653½ lbs.
" second "	647½
" third "	523½
" fourth (a sow)	466½

Total, 2290 lbs.

They wanted six days of being twenty-one months old. The sow has had two litters of pigs—the last of which were weaned only twenty-four days before she was slaughtered. Mr. Worth was not present at the time of weighing them, but supposes it to have been done correctly. He adds that he had estimated their weight at 2300 lbs.

Respectfully, &c., AARON CLEMENT.

Philadelphia. Jan. 26th. 1847.

The above were certainly four noble gruntners, and had reason to be proud of themselves. Even in a pen of sixty hogs lately killed by Isaac Woolston, the steward of the Burlington County Poorhouse, in New Jersey, they would have made themselves conspicu-

ous. These sixty, as we learn from the *Mount Holly Mirror*, weighed 24,131 lbs., making an average of 402 lbs. The largest weighed 542,—the smallest 304 lbs.—Ed.

For the Farmers' Cabinet.

Observations on the Potatoe Disease.

MR. EDITOR.—I have already given you some of the results of my observations on the potatoe disease. I will now give you others.

You are aware that there are those who hold, that the potatoe disease is caused by the hot weather. I will make an effort to show what influence the heat has upon the disease, and thus add another proof of the truth of my theory. I noticed, this season, after the disease had well commenced, when we had a few very hot days, that the disease progressed much faster, and threatened to destroy every potatoe in this neighbourhood that was exposed to it; but after a few days the weather became cooler, and being somewhat dry, the disease was checked, and a portion of the crop was saved. Now there must be a cause for this, and I will attempt to show that cause.

In order that decay should progress, it is necessary that a certain quantity of heat and moisture should be present. The more of these, the more rapid will be the decay. The products of this decay are carbonic acid, &c. When the weather was very hot, there was sufficient moisture in the ground and in the air for the purposes of decay. During the night the moisture in the air would be precipitated in large quantities upon the plants, and in the morning there would be a heavy dew. These circumstances, then, being highly favourable for rapid decay, all those plants which had already seeded, (and there were a host of them,) and had commenced decaying, now rotted very fast, and filled the air with carbonic acid gas. This supply so vitiated the air, and rendered it so unwholesome, that a large portion of our population became afflicted with fever and ague, bilious fever, intermittent fever, and other diseases, so much as to check, in a great degree, the business operations of the community. Many kinds of plants, also, suffered severely, but particularly the potatoes—they rotted very fast. Shortly after the weather became cooler—a portion of the carbonic acid became absorbed by the forest trees and other living plants, and the conditions essential for decay not being present in so large quantities, the decay progressed more slowly, making the supply of carbonic acid not so great. The beneficial effect was almost immediately felt by the potatoes—they suf-

fered less, and the drought continuing, and the weather remaining cool, the disease was almost entirely stopped. Nor was the beneficial influence of the cool air and drought felt alone by the vegetable creation. Our population became healthier, and we now hear of comparatively few cases of disease. And what remains of the fruit and other crops have ripened finely and been gathered in good order.

CHEMICO.

Wilkesbarre, Oct. 22, 1846.

Alderney Cows.

SOME gentlemen have not thought the Alderney cow handsome; but in truth, she is the *handsomest of cows for the dairy*, although she may not fill the eye like a thorough-bred Durham, in good condition, so much esteemed by every experienced dairyman; yet there are thousands of families who want one or two cows, rich in milk and butter, mild, gentle, and intelligent, on excellent terms with the milk-maid, and the Alderney, of all others, is *the cow*. She is well adapted for the lady of a snug rural mansion, and all dairymen would find it to their interest to keep two pure Alderneys to every twelve cows, the advantages of which are well understood in some parts of Scotland, and perhaps a dairy of twenty well-chosen animals of this breed would compete with any twenty cows in the United States, when butter of superior quality fetches a good price. In short, the finest specimen of an Alderney is a true emblem of a milch cow, and any person keeping this breed merely for the dairy, who once gets one, feeds and treats her properly, will never be without one.

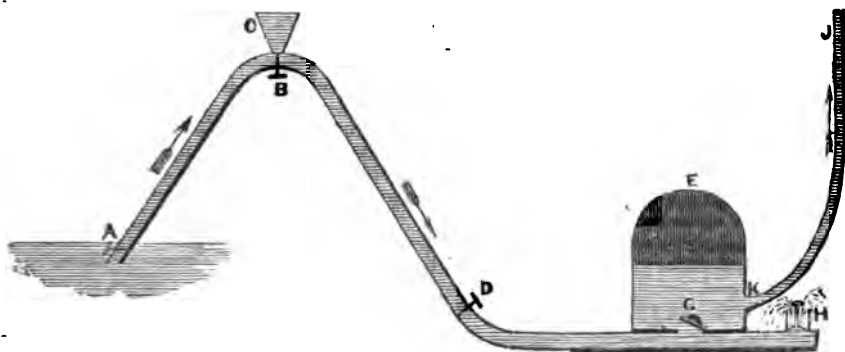
A good Alderney cow in Jersey, is expected to yield 7 lbs. of butter a week, and many have been known to produce double that quantity for a short period. Some give from 16 to 18 quarts of milk per day, during the months of May and June; and I was told of numerous instances of cows which yielded from 10 to 14 lbs. of butter each, in a week. Major Barns, the Governor, informed me that he had a cow which gave 25 quarts of milk a day; but ordinary cows did not average more than 10 quarts a day, yielding 7 lbs. of butter, each, in a week. It was stated, that, in summer, 9 or 10 quarts of milk would produce a pound of butter, and, in winter, when the cows are parsnip-fed, the same quantity of butter may be obtained from 7 quarts. The general average yield of each cow, old and young, is rather more than 365 lbs. of butter in a year, or about 8 quarts of milk per day.

The cows there, are universally tethered,

and are moved, watered, and milked, three times a day. They are fed principally on lucern or clover, but the quality of their butter is never considered so good, when thus fed as when they range on a natural pasture.

The milk, when strained stands at about 10 inches deep in the vessel, till the cream has all risen, which usually occupies three days in summer; and in winter, in order to hasten its rising, the vessels are covered and placed on the hearth at bed-time. Consequently, skimming is never performed but once, and then not before the milk has become coagulated or turned sour. In the operation of skimming, the cream is first detached from the edge of the vessel all round, and then is raised up together, as much as possible, and by inclining the whole mass over the vessel intended to receive the cream, the latter will sometimes slip off at once from the coagulated milk. At the bottom of the vessel there is a small hole stopped with a peg, which is occasionally withdrawn, in order to drain off the serous or watery portion of the milk, and thereby separate it from the cream.—*American Agriculturalist*.

LABOR.—It is labor which *puts the greatest value upon land*, without which it would scarcely be worth any thing; it is to that we owe the greatest part of all its useful products: for allow the straw, bran bread, of that acre of wheat is more worth than the product of an acre of as good land, which lies waste, is all the effect of labor; for it is not barely the ploughman's pains, the reaper's and thresher's toil, and the baker's labor, that is to be counted into the *bread* we eat; the labor of those who broke the oxen, who digged and wrought the iron and stones, who felled and framed the timber employed about the plough, mill, even, or any other utensils, which are a vast number, requisite to this corn, from its being seed to be sown, to its being made bread, must all be *charged on* the account of *labor*, and received as an effect of that; nature and the earth furnished only the almost worthless materials, as in themselves. It would be a *strange catalogue of things, that industry provided and made use of, about every loaf of bread*, before it came to our use, if we could trace them; iron, wood, leather, bark, timber, stone, bricks, coals, lime, cloth, dyeing drugs, pitch, tar, masts, ropes, and all the materials made use of in the ship, that brought any of the commodities made use of by any of the workmen to any part of the work; all which it would be almost impossible, at least too long, to reckon up.—LOCKE.



For the Farmers' Cabinet.

Machine for Raising Water.

I AM pleased to find by the frequent notice taken of Montgolfier's Hydraulic Ram, in the agricultural newspapers and magazines of the North, that this simple, effective, and inexpensive machine, is likely to be hereafter more generally used for the purpose of raising water. It is a matter of surprise that so beautiful a contrivance should have become so obsolete and neglected, as to be scarcely known except to the scientific.

A few years ago, before these machines had come into use in the United States, I caused one to be constructed near Covington, La. The fall of water requisite to work it being very small, I continued to increase it by the improvement which I am about to describe.

A B D is a leaden pipe, bent into the form of a syphon and carried over the bough of a tree, the short leg A B resting in the pond or spring that feeds the machine, and the longer leg B D, conducting to and terminating in the machine itself, which is placed a few inches lower. C is a funnel communicating with the interior of the syphon through an air-tight three-way cock B, of the same calibre as the syphon itself. At A, under water, and at D, a few inches lower down than the end of the pipe at A, are stop-cocks, also of the same diameter as the interior of the pipe.

The cocks A and D being closed, the cock at B is opened, so that water poured into the funnel C, will fill both legs of the syphon. This being completely filled, the cock B is turned so as to cut off all communication with the funnel, leaving the syphon still open. The cocks at A and D are then opened simultaneously, when the water of the spring immediately begins to enter the

short leg of the syphon and descend the leg B D, in a continual stream, with a force amply sufficient to set the machine in operation.

In this manner, by employing a syphon instead of a straight pipe, conducting from the pond or spring to the ram, a fall of six or twelve inches, which would not afford sufficient power to work the ram, may be increased in power so as to equal that of a natural fall of many feet. A fall of one foot or more may be obtained in any situation, by partly *burying* the ram, so as to place it lower than the feeding reservoir; and the escape of the waste water will not impede the working of the valves, for I have made it work at a depth of two feet under water, by simply lightening the escape-valve at H, of a part of its weight. A fall of five or six feet, is amply sufficient for all ordinary purposes. The power will, of course, be in proportion to the perpendicular height of the syphon; which cannot, however, be made to act, if its elevation exceeds thirty-two feet. This will give a power of 14 pounds to the square inch, if merely the dead pressure be taken into consideration, but a much greater power if the momentum of the descending column of water be calculated. The forcing power of the air vessel, like the power of a Bramah press, will increase in proportion to the enlargement of its horizontal area. An air vessel twelve inches square, with a head of 32 feet, would exert a power on the water within it greatly exceeding 2000 pounds.

For the information of those unacquainted with the machine, it may here be well to sketch briefly its operation. Suppose B D H to be a pipe leading from an elevated spring to lower ground, and closed at the lowest end. H is a valve of leather, metal, wood, or caoutchouc, opening inwards and downwards, loaded with a small weight, and

Address

*Wm. Morris Longstreth, before the
Jeffersonville Agricultural Association,
Montgomery county, Pa.*

to address the "Jeffersonville Association," you will allow my hearty congratulations, at length followed the examination of other States and an united effort in the agricultural improvement. *there is strength;*" and this is especially applicable to the tillers of the soil, who, from the nature of their employment, must habitually live and labour, in a measure isolated—and therefore eminently feel the necessity of stated meetings, to discuss matters appertaining to this greatest of all temporal interests.

In thus associating, you have not only consulted your true advantage, but you have also followed the instinct of the age, in concentrating the light of many intellects on a given point; and for the benefit of others, it may be suggested that your deliberations in future should be recorded, and transmitted for publication to some agricultural journal. In this facility of preserving facts by printing, lies our greatest advantage over past generations, and the germ of improvement in all time to come; for no hand can write, no tongue can tell, what sublime discoveries in the science of agriculture, may have perished with the myriads who have gone before us, from the period when the command went forth, "In the sweat of thy face, shalt thou eat bread." For in the midst of his toils, the agriculturist may derive new vigor to his nerve and new strength to his arm, from the reflection, that his occupation, blended with that of the herdsman, has been especially appointed to man, as the condition of his existence, by the fiat of his Creator.

Labour, moreover, has been blessed by Heaven; and the enjoyment of Paradise itself, without the occupation of the faculties bestowed upon him, was totally incompatible with the happiness of man. This is proven by the fact, that when he was created and placed in the garden of Eden, he was not to eat the fruits of idleness, but he was enjoined "to dress it and to keep it." It is therefore an ordinary error to imagine that the necessity of labour involves also an onerous burden;—whereas, all whose fate it is to have no occupation, are among the most miserable of mankind. Idleness on the one hand, and excessive labour on the other, constitute the extremes, and which is the greater evil of the two, is a problem very

difficult of solution. The happy medium is moderate labour and an adequate reward; and this condition, which incidentally includes sufficient leisure for the cultivation of the social relations, literary pursuits, and political duties, is attained in this commonwealth, as perfectly as under any system of government with which we are acquainted, ancient or modern.

Labour, being of divine institution, and necessary to the well-being of man, is therefore honourable; and as nations emerge from barbarism to the light of civilization, this truth is fully recognized. And while we accord to the manufacturer, the mechanic, and the miner, the reward due to their useful pursuits, it will not be forgotten, that to the tiller of the soil they owe the very staff of life, and that his vocation lies at the root of human existence.

Pre-eminently honourable, therefore, because pre-eminently useful, is the life of the honest farmer; and if he ever should be tempted to repine at his lot, and covet the luxuries of city life, let him beware of the thorn that lies concealed under the gaudy exterior of fashion; and of the vices that lurk in the precincts and purlieus of our cities. Of the vicissitudes of mercantile affairs, I can speak with the advantage of much personal experience in earlier life; and may safely say of my own knowledge, that of every ten individuals who devote themselves to commerce, under the credit system, not more than one is eventually successful. Let him remember, on the other hand, that in the refined, but highly artificial state of society in our cities, our most eminent citizens propose to themselves, as the appropriate reward for editorial, legal and medical ability, artistic merit, and mercantile success, an evening of existence, devoted to the innocent, natural and pure enjoyment of life in the country.

Cato says,—and we can have no higher Pagan authority,—"That the country man has fewer bad thoughts, and as his property binds him to the state, not so much as a pledge, but by the stronger and better ties of feeling; so it is natural that a labour wholesome to the body, whose powers it keeps in exercise; and not performed in gloomy dwellings, but in the unrestricted life of nature, in the sunshine and the storm, should preserve the mind in perfect soundness, and thereby cherish a sobriety and acuteness of observation, a calm and unbiased judgment. The free country man, who cultivates and reaps his own field, enjoys in the progress of the seasons, and the nature of his employments, an ever-varying and liberal relaxation, without which it is

almost impossible that soul and body can be maintained in unbroken soundness."

In the present enlightened state of the public mind, it is requisite that we cultivate the intellect as well as the soil; and restore to our profession a shadow of its ancient dignity; when prophets, poets, and statesmen, gloried in an art which has been trampled upon and despised, only in ages of ignorance and barbarism. There is in fact no better standard, by which to measure the intelligence of a people, than to observe the estimate which is placed on agricultural pursuits. Illustrations from classical literature, as well as sacred history, crowd upon us at this juncture. All the polished heathen nations of antiquity placed agriculture under the special superintendence of some favourite deity.

The Isis of the Egyptians, and the Ceres and Proserpine of the Greeks and Romans, presided over every production of the husbandman: and the beautiful allegory of the retirement of Proserpine to the shades of Pluto, for half the year, typified the dormant condition of nature in winter, and her return, its brilliant revival in spring. Abraham, David and Elisha, the latter of whom was found ploughing in his field, with a yoke of oxen, are sufficient examples of the practice of the Hebrews. Hesiod, the contemporary of Homer, wrote in its praise, and Xenophon, one of the great names of antiquity, not only was a farmer, but the author of a beautiful account of rural life 2,200 years ago. The Romans practised the arts of tillage, with a zeal only secondary to their military pursuits, as the example of Cincinnatus, and the writings of Cato, Columella, and Virgil, sufficiently attest. There cannot be a better illustration of the honour attached by the Persians to the art of agriculture, than the account given of the interview between the younger Cyrus and the Greek General, Lysander, who being led by Cyrus through his grounds: "All these," said the Persian, "I have myself planned, and even planted many of the trees with my own hands;" and when the Spartan General replied, by an incredulous glance at his splendid robes and chains, and armlets of gold, he swore to him by Mithras as a good servant of Ormuzd, that he never tasted food till he had fatigued himself by labour.

Tradition has rescued from oblivion and transmitted to us, the rudiments of almost all we yet know and practice, notwithstanding much that must have been lost. The remains of ancient sculpture and pictures, also help to enlighten us, and it is interesting to view the first rude attempts in forming the hoe, spade, reaping hook, and plough.

The plough, especially, exhibits every grade of improvement, from the wooden beam, with a hard knot for a coulter, down to the efficient and scientific implement manufactured in this village by your friend and neighbour, Seth I. Roberts.

The tyro in agriculture may also be surprised and enlightened by the discovery, from the few agricultural works that have come down to us, that nearly all our ordinary manures were well known to the ancients. This is sufficiently exemplified by a description of a Roman manure heap that would do no discredit to our own times: "Almost every material capable of decomposition, which modern science or experience has suggested, animal, vegetable, or mineral, was carried to the manure heap. Their manure yards were slightly hollowed and paved at the bottom." They were also favourable to ploughing under green crops; drill husbandry was in full operation, and threshing machines were invented more than two thousand years ago. Though we do not find any direct mention of plaster, yet the use of lime was common in various nations. Thus it will be seen, notwithstanding our astonishing strides in other branches of knowledge, which consists, however, chiefly in the combination and application of well known principles,—yet that in the science of agriculture, we are still in our infancy.

We are indebted for much that has been handed down, to the monasteries of the middle ages; whose sacred character preserved them from the violence of the feudal Barons, in whose libraries were sheltered the ancient books, and on whose lands were carried on almost all the agricultural operations that could be safely practised.

In one important branch of our profession we are indeed far inferior to the Egyptians and Assyrians, and that is "irrigation." It is true, in this region, favoured by the late and early rains, we are not under the absolute necessity of following this system, though we know its benefits, from the high value of our watered meadows. In Egypt, there are yet rude attempts made to follow in the ancient track, by pumping the waters of the Nile into reservoirs and canals. But the system of artificial irrigation, was perhaps best understood in Mesopotamia, the land first inhabited by man; a region famous for its early civilization and fertility. That country, lying between the Tygris and Euphrates, and which must have been the granary for the stupendous cities of Babylon and Nineveh, is now almost a desert, and its teeming population replaced by tribes of wandering Arabs. The happy situation of

this region, and the circumstance of the bed of the Euphrates lying on a higher level than that of the Tygris, enabled the wise Chaldeans to open a perfect net-work of sluices and canals from the former river, which after irrigating the country, were absorbed by the soil, or discharged into the Tygris.

Even the use of the artificial grasses, which is sometimes claimed as a modern improvement, was familiar to the ancient farmers of Italy and the provinces, as we are informed by Gibbon; particularly the Lucerne, which derived its name and origin from Media. Other descriptions of clover were no doubt introduced with the alternate system of husbandry, which must have accompanied the seeding of the artificial grasses.

Thus do we find ourselves forestalled, in the adoption of the artificial grasses and alternate husbandry; and there is reason to believe that we should rather regret our ignorance of the methods of tillage practised by the ancients, than deplore their ignorance of our improvements. Lucerne is not yet fairly domesticated, and there are individuals yet living who have witnessed the introduction of red clover into our system of rotation of crops. This great ameliorator, I was informed by the late James Vaux, was first imported and sown by him, on a farm in this vicinity,—now partly belonging to John Shearer, Esq.,—previous to the American Revolution. From hence it rapidly spread throughout the State. Some years ago, I tried the experiment of importing white clover seed from Germany, in some parts of which country it is used instead of the red. It added much to the beauty of the pastures, but the excess of it was found too difficult to dry, when making hay. Our country likewise claims to have been the first in which plaster was introduced to stimulate crops. The venerable General Scheetz, now in his 84th year, remembers when he was yet a boy, that a vessel arrived at the wharf in Philadelphia, containing some lumps of plaster among the ballast. A German passenger, having hired with a farmer in Whitmarsh, informed him of its virtues when applied to grass; whereupon a specimen was procured, reduced to powder, and spread, with such benefit, as to insure for the future, a regular and constantly increasing demand.

Farmers have been accused of parsimony; and are perhaps prone to err on the side of extreme caution, not only in reference to novel modes of tillage, but especially do they demur to the adoption of new and untried breeds of animals. This is not surprising,

for the farmer has no superfluous cash to throw away on doubtful experiments. His money comes hard, and is held tight. To succeed in his business he must economize; moreover, experiments in farming are unlike those in chemistry or optics, whose results are instantaneous—they are the work of time; and long years may be consumed in doubtful, or disastrous researches. Though every good farmer must possess habits of accurate observation, his attention is nevertheless constantly distracted, by the various duties of the farm. He has seen speculations—that of the *Morus Multicaulis*, for instance—explode like the South Sea bubble. The introduction of Merino sheep, likewise, was an era of wild and ruinous speculation, which some of you may remember. Both of these experiments will probably result in permanent benefit to the interests of the country; but accompanied as they were, by so much individual suffering, it is too much to require us to repeat the dose very often. We are now invited to introduce the Alpaca from South America, on account of its superior wool. From its history, and an examination of a specimen now in the menagerie in Philadelphia, it would appear to unite the characteristics of the sheep and camel. It has been introduced into Europe, and through the medium of a company formed in Boston, we may ere long add it to our list of domestic animals.

It cannot be expected of individual farmers in this country, to perform a duty, which, if undertaken at all in foreign nations, is the work of government. An intelligent friend who travelled last summer through Spain, informs me that so attentive is that government to this object, that it has recently imported from Africa large herds of elephants and camels, to inhabit an extensive tract of waste land, on the banks of the Guadalquivir. To these have been added, with more doubtful expediency, a species of tiger, comparatively harmless, for the sake of its brilliant skin: so that our amateurs need only visit the vicinity of Seville, to witness, as did my informant, the habits of some of these animals in a state of nature.

Closely connected with our subject, I may mention on the same undoubted authority, that throughout Andalusia there is now a general revival of agriculture. The famous Vegas of Granada and Malaga are once more blooming gardens, as they were in the times of the Moors. The accumulated waters of the hills, are during the day dammed up in reservoirs; and under the superintendence of a public officer, they are distributed through thousands of sluices, to irrigate the fields at night. As a natural

consequence of the revival of agriculture, navigation, commerce and manufactures, are again flourishing. This gentleman himself wore a beautiful cloth manufactured at Barcelona. Spain has long been treated as a colony by England, for the production of wool, which England kindly undertook to manufacture and return to her, increased ten fold in value. The expulsion of Espartero broke this dependence, and if she can succeed in re-annexing Portugal, Gibraltar must follow. Then may the noble race, which produced a Gonsalvo de Cordova, and a Ponce de Leon, after ages of oppression and apathy, again commence a career of prosperity, which was extinguished in the avalanche of gold and silver in the sixteenth century, from the new world.

The most eligible mode, in our country, for the introduction of whatever is beneficial, would be the formation of a company, in some central position, for the establishment of Botanical and Zoological Gardens; which, located in the vicinity of a great city, would soon pay their own expenses. Here animals, as well as plants, might be gradually acclimated, and when proved by experience to be valuable, there would be no difficulty in getting them adopted by farmers. I am happy to be informed, that several liberal minded gentlemen of Philadelphia have had such a plan in contemplation, to be carried into effect in the vicinity of that city.

The formation of extensive libraries, is not the only method of diffusing knowledge among men; and it is a subject of regret, that the Smithsonian Institute, at Washington, connected as it is with Government, could not be made subservient to this vital interest.

But, after all, gentlemen, it becomes us as intelligent men, whose prosperity depends upon our own efforts, to institute an inquiry as to the best method of obtaining the ways and means. We see ourselves beset with difficulties, but we do not labour like those without hope. Our greatest burden is excessive taxation. This is indeed the burden of the farmers' song in all ages; and arises from the fact that land can always be found, while money and jewels can always be concealed. Our legislature, aware of the injustice done to the farmer, has made an effort to tax persons; we all know with what success. The interest of our public debt could readily be paid, if taxation was equalized in proportion to value and protection. But the operation is so much the more severe upon us; inasmuch as our taxes are entailed upon us, to support canals and railroads, whose principal business it is, to

transport commodities which come in competition with, and reduce the price of our own productions. If it be true, as the poet says—that

"Partial evil 's universal good,"

we must not complain. We do not dream of repudiation: but we demand of our brethren, for whose benefit we suffer, a just and honest equalization of the burden. So much for the present: and as a guarantee for the future, we propose an amendment to the constitution, requiring that the State shall contract no debt, without a special appropriation for its speedy extinction.

On the other hand, it must be frankly admitted that our advantages do much predominate. We have one of the best markets in the world, which takes at a fair price, every description of our surplus produce. We have a soil which only requires good management to be highly productive. We have the means of procuring manure, which is the very life of the land, in abundance.

The duty on salt, an article so essential to the farmer—which was abolished in England in 1823, and which we have patiently borne for more than half a century—has recently been reduced.

We have plaster at a price which is always reasonable. Above all, we have lime at our doors, cheaper than it can be produced elsewhere. This is an immense advantage, of which we have not failed to profit. The high and increasing value placed upon lime, may be estimated, from a passage in a late work on calcareous manures, by an eloquent French author, M. Puvias.

"The Supreme Being," says he, "appears to have placed lime everywhere, at the disposal of the industry of man: he has left him to labour in its employment and sometimes in its preparation: but this is not an unrequited labour; for the established laws of vegetation almost always recompense him by excellent results."

You are however practical farmers, and each one of you has, I doubt not, his own peculiar views about manuring the soil, ploughing the land, seeding wheat, and planting corn. "Many a time and oft" have you discussed the origin of mildew, smut and cheat. Amidst much diversity of opinion among farmers, you have perhaps never known a miller who would admit the dogma, that wheat could turn to cheat. In this, the millers are supported by the botanists; who assert that like produces like, all the world over. If, however, wheat will not produce cheat, it will be admitted that the seed of cheat like that of some other grasses, must lie dormant for generations;

until ploughing or other change of circumstances, produces vegetation. It would be a poor return for your kindness in inviting me this day to address you, were I to take advantage of my position, which by courtesy admits of no reply, to force upon you my crude ideas on these disputes "never endeavoured to invite your attention to efforts made, still beginning." I have rather endeavored in your noble calling in by-gone days.

In taking a short review of our principal crops, it will be necessary to refer to my own opinions and practice. I shall do so with due deference to the more matured experience of others; for of all subjects it least becomes a man to dogmatize on agriculture. So various are the qualities of land, and the proportions of vegetable and mineral ingredients of soils, even in the same vicinity, that opposite results often occur in contiguous positions. Experience is, therefore, the safest teacher, and will remain to be so, even when our country shall be filled with agricultural societies; and farmers shall carry a portion of their soils to the laboratory of the chemist, to ascertain the kind and quality of manure or stimulus required for any given crop.

Indian corn is usually our first crop after it is considered necessary to plough the sod; and consequently commences our system of rotation. According to the able report of the Commissioner of Patents for 1845, whose statistics I shall hereafter quote, the yield of Pennsylvania, that year, was 17,126,000 bushels.

The relaxation of the British corn laws and the failure of the potatoe crop, have made Indian corn an article of immense commercial importance. Though long cultivated in the south of Europe, yet every effort of enlightened and scientific men to introduce it into general use, had failed. Joel Barlow's poem in praise of hasty pudding, or mush, as we call it, and William Cobbett's extraordinary efforts proved alike unavailing, until the anathema of the latter upon the potatoe, seemed realized by the universal blight.

It is probable that some inferior descriptions of corn were indigenous in both Asia and Africa—though on this disputed point much ink has been shed, without settling the question. It is however certain, from the testimony of the early navigators, that Indian corn was in universal use among the native tribes of this continent, from Canada to Patagonia. Botanists have likewise discovered it in a state of nature, especially Humboldt and Bonpland. By the kindness of Peter A. Browne, Esq., of Philadelphia,

who has written an interesting essay upon Indian corn, I am enabled to exhibit to you an ear of native corn; each grain of which is covered with a husk or glume. There is evidence that this corn has been found at the base of the Rocky Mountains; and it is certain that it grows wild in South America. Upon being cultivated it loses the husk on the grain, and assumes the appearance of several varieties. To the same gentleman am I indebted for the rare specimen of fossil corn from the neighbourhood of Wheeling.

The large sample of Gourd seed corn is a specimen of the yield of Oregon; this ear having however been produced from seed, introduced from that country last season. After having tried many varieties, as the Baden, Jackson, White, Gourd seed, and Dutton corn, I am convinced the old Pennsylvania eight-rowed yellow—the King Philip corn of New England, is in this latitude safest and most productive. Safest, because its hardy habits and early maturity secure it from frost; and most productive from the extraordinary number of ears to the stalk. I have for many years selected seed from the most fruitful stalks, which sometimes produce four perfect ears. Matured in the hill, its yield is, according to the season, from 60 to 70 bushels shelled corn to the acre; not guessed at, but measured. When to these advantages is added 10 per cent. additional price, which is usually realized upon this variety of flint corn, and the preference given to it by millers who grind corn and cob together, have we not made a strong case! The cob has been estimated to contain more nourishment than bran; and distillation proves it to produce both oil and spirits. I have fed largely in this way for several years by substituting the cob in place of oats, usually chopped with the corn—which is too concentrated and heating, without some admixture. It must be borne in mind that the capacious stomach of the ox or cow requires distension, as well as strong nourishment. For milch cows, we always add one-half of wheat bran to the mess—and to all kinds of feed, a proportion of at least one-eighth of cake meal.

The only author that I know of who has vilified Indian corn, is the famous Charles Dickens, in his "Notes on America;" who declares that our corn bread laid like molten lead upon his stomach: which is the best apology he has yet made for the atrabilious character of his book.

The oat crop, which usually succeeds that of corn, has important claims upon the good opinion of the farmer—its yield in Pennsyl-

vania in 1845, was estimated at 19,826,000 bushels, being greater than that of any other grain.

Though not used in this country as in North Britain, for the food of man—and in our climate degenerating in weight and value; yet as food for horses on a journey, it is unsurpassed. It does not possess the nutritive properties of corn, but it is exempt from its heating and feverish tendencies. It succeeds well on land rather cold and wet, and perhaps the best oats produced in Pennsylvania, grow upon the table land of the Alleghany mountains. It is indeed from these more inclement and cool regions that we are forced to procure a renewal of our seed. There are several varieties of oats cultivated, called by various local names, as Barley oats, Black oats, and the Tartarian or one-sided oats. This crop has the valuable property by its rapid advance, of overshadowing and discouraging the growth of weeds; and consequently leaves the ground in an admirably clean condition for the wheat and grass crops which follow it.

Wheat, the most important of the cereal grasses, is, and always has been the great object of the farmer. In all countries capable of producing it, the best lands are devoted to its cultivation. So long has it been under the dominion of man, that it is supposed all traces of wheat in its wild, or native state have been lost. Mr. Buckingham, however, in his travels in Mesopotamia, near Orfah, the "Ur of the Chaldees," found the plains covered with a plant, which on comparing it with wheat, he considered to be that grain in its native state.

In very early periods, wheat was a luxury, the use of which was confined to the wealthy. The ancient kings of Persia, who drew from each province of their vast empire, the production for which it was most distinguished, selected Syria as their granary for wheat; and the most beautiful specimen I have ever met with, was brought from the vicinity of Jerusalem. Thirteen grains were sent to me, and every effort was made to propagate seed from them. Several germinated, throwing up stems and developing heads of extraordinary size. But it was struck by mildew, and after the second season ceased to reproduce. The result of this and other experiments of the kind, are the less to be regretted, as there is reason to believe that any variety of wheat will soon adapt itself to the soil and climate in which it may be introduced.

You must have observed what a change has come over the Mediterranean wheat so generally adopted by us a few years ago. It has lost its exemption from the fly and

mildew, and it is with difficulty a pure sample can any longer be obtained: it being apparently absorbed into our old red chaff bearded wheat; which was doubtless introduced upon the first settlement of the country, and found to be well adapted to the soil. Pennsylvania, though producing 12,580,000 bushels of wheat in 1845, was surpassed by Ohio and New York; and as Michigan, Wisconsin, and Iowa are entering into the arena, it may be wise in us to look to some other crops, in which we shall not be subjected to such dangerous competition.

Though we all know by sad experience, that a season seldom passes during which this crop is not assailed by some of its legion of enemies, yet perhaps our average produce is nearly as much per acre as in England. The weight of the straw is estimated at about twice that of the grain; and early cutting is found to be both safest for the wheat and best for the straw. We never sow of late years less than two bushels per acre.

Rye, which is sometimes substituted for wheat in the system of rotation, appears to be a particular favourite, as Pennsylvania produced, in 1845, 11,929,000 bushels, or nearly four times the amount of any other State. The quality of the grain is admirable in our more northern and hilly regions, but like oats, degenerates south of the fortieth degree of latitude. Rye straw may be considered the most valuable for the production of manure and the various purposes of the farm.

Buckwheat is extensively cultivated in those parts of our State most distinguished for oats and rye. A large annual exportation of buckwheat meal is made to the seaports, both north and south of Philadelphia. The crop of 1845 produced 3,322,000 bushels.

Barley has almost been banished from the list of our staples, and the Philadelphia brewers are forced to depend chiefly upon New York for a supply. The crop of 1845 was estimated at only 141,000 bushels.

In these statistics we are surprised to find the very large amount of 1,600,000 lbs. of sugar, 535,000 lbs. of tobacco, and 41,370 lbs. of silk cocoons, credited to Pennsylvania.

The potatoe crop has been failing gradually for several years; and in 1845 was estimated at 5,497,000 bushels.

The potatoe had exhibited a gradual deterioration in constitutional stamina, long before it was overtaken by the fatal rot; which is now producing such disastrous effects in the old world. The importance of agriculture in the eyes of statesmen, has never been more strongly developed than now, when kingdoms are convulsed, and empires

may be overthrown, by the failure of a crop of potatoes.

It may perhaps be laid down as a principle, that any plant propagated only from roots or layers for a long period, that is capable of reproduction from the seed, will degenerate and finally fail. And the seed from these emasculated plants, will naturally partake of the weakness of the parent stem. We shall therefore be under the necessity of renewing our seed from the Andes; or some other region where the potatoe can be found in a state of nature. In the mean time, as the blight has not visited us with anything like the destructive effect it has had in other countries, we may, by the choice of light and dry soils, succeed in raising a sufficiency for our domestic consumption; for without the potatoe, the dinner table would be a desert.

Though the laws of vegetation require a certain variation and succession in the cultivation of all crops that are not natural to the soil, yet the skill of man can so modify these laws, as to bend them to his necessities.

There is living in Northampton county, Pennsylvania, on the banks of the Lehigh, a very aged man, whose success in falling upon a system of rotation, by which he could obtain the greatest possible yield of wheat, in a given term of years, has caused it to be generally adopted in that fertile region. It is called Sheimer's system, after the discoverer, Jacob Sheimer, whom I had the curiosity to visit at his most substantial homestead some years ago; and from whom I obtained the following account:

When a young man with a large family of children growing up around him, and dependent on him for support; he plainly perceived that under the rude practice then existing, he would not be able to maintain them. He often thought over his difficulties while following the plough, and at length determined upon his plan; which followed up without faltering, has conducted him in the decline of life to ease and affluence.

When I saw him he had resigned the active duties of his farm to a son, who was following in his footsteps; after having himself practised his system of rotation for 35 years, with a constant improvement in the quality of his land; which indeed had the unmistakable stamp of fertility upon it.

The farm contained one hundred acres, which was divided as nearly as possible into eight fields of twelve and a half acres; each of which was carried through an eight years' rotation.

Commencing with a fallow field, he

1st year. Manured and limed; ploughed three times, in May, June and August; harrowed and seeded one bushel and three pecks per acre of wheat, which was ploughed under.

2nd. Clover seed sown on wheat in the spring, six quarts to the acre, which was pastured after harvest.

3rd. Plastered clover in the spring, one bushel per acre; cut in June, and ploughed under second crop, and seeded again with wheat.

4th. Wheat—same as No. 2.

5th. Pastured early in the season, ploughed under second crop in August, and sowed wheat.

6th. Wheat again, and rye sowed on stubble.

7th. Sowed clover seed in spring on rye.

8th. Ploughed under clover sod and planted corn; and next season recommenced.

It will be observed that there were every year three fields in with wheat, one with rye, one with corn, two with clover, and one fallow. The produce had one season reached as high as 1,400 bushels of wheat, 600 bushels of corn, and 300 bushels of rye.

It is only of late years that science has discovered and applied the animal and vegetable refuse of the manufactories of Philadelphia to the use of the farmer. A commencement has been fairly made; and the glue boilers, skin dressers, colour manufacturers, wool combers, and sugar refiners, now contribute to the fertility of the soil, what but recently was a public nuisance. Poudrette, guano, and bonedust, are also considerably used. All these manures I have seen applied with manifest, but various advantage. My own experience has been in favour of a compost of marsh mud, plaster, lime, and stable manure.

Bonedust has not on our heavy, rich soils, produced anything like the effects described in England; and the consequence is, that bone gatherers are constantly travelling far into the interior, collecting bones, which are ground in Philadelphia and shipped to Liverpool. From this we may infer that the field of Waterloo is exhausted.

He who uses or consumes upon his own land the straw or hay of his fields, selling only a portion of his grain, his fat cattle, and butter, may keep his land in an improving condition; and aided by lime and plaster, need look no further for manures. The process of returning to the soil the culm or straw it has produced, is recuperative and reproductive, and is a wise provision of nature to save land from a tendency to sterility. Whoever sells hay or straw, should replace every ton sold, with an equal weight

of manure. For actual experiment has proved, that each ton consumed or littered in stables, produces much more than its original weight in manure.

After all that has been said about composting, candor obliges me to confess, that long research, enquiry, and some practice, incline me to the opinion, that the most economical method of applying manure, is direct from the stable to the soil. I have thus applied raw manure to corn ground and ploughed it under, and as a top dressing for grass sod at all seasons, except the depth of winter and in mid-summer, with results that were not only satisfactory, but surprising. Shakspeare, from whom even farmers may gather instruction, says: "Do not spread the compost on the weeds to make them ranker," which proves the practice of top-dressing in his time.

If we could conveniently get our manure from the stable spread upon the field where it was wanted, and ploughed under, the field itself would be the great compost heap, or laboratory, saving to the soil an immense amount of gaseous evaporation. This practice has been introduced into England on a large scale; and some of its advocates go so far as to attribute to it a saving of one-half the manure. The experiment is worth trying, because it could not result in any loss; but as the question is important, and our time too limited to go fully into it, I beg leave to refer you to an admirable article on the subject, in vol. 7, p. 565, of the "Quarterly Journal of Agriculture"—which can be obtained in the Philadelphia Library, and perhaps in that of Norristown.

In approaching the conclusion of this long, and I fear tedious discourse, I am also approaching a branch of our subject, upon which it is probable I shall have the misfortune to differ from many, for whose judgment I have great respect.

In advocating the careful preservation of old pastures, and even recommending a large increase of permanent natural grasses, it will be understood that I confine my views to a marketable distance from Philadelphia. This area is, however, constantly extending with the annual increase of that great city; and a consequently augmented consumption of the products of the dairy. The fine taste displayed in favour of ice cream, its recommendation by the physicians in many cases of illness, and above all the submission of the patient in swallowing it, indicate a tremendous increase in its consumption. To supply this demand many milk and butter farms are already appropriated; and the production of butter will necessarily be from a greater distance. When to this is added

an acquaintance with the famous clotted cream of Devonshire, which requires only to be tasted to be perhaps more popular than ice cream; you will perceive the necessity of a vast addition to our pasture lands, of fine natural grass, for which this vicinity is so celebrated.

The abundance and sweetness of our pastures, and the peculiar variety of grasses of which they are composed, seem to indicate that nature intended to afford us every aid, in the adoption of a system which has the additional and indispensable merit, of being also the most profitable.

Many farmers may be deterred by the apprehension, that there is not a field upon their plantations that could be made to retain grass. They imagine it would run out. Let them try the experiment, at one-half the labour and expense bestowed upon land devoted to tillage, and in due season they may find their pastures the most profitable and least expensive parts of the estate.

It is difficult to introduce new systems, and when in pursuance of a conviction that this was the true plan, I commenced top-dressing old timothy sod, instead of ploughing it for corn, I was told that our land was not natural to grass, and that top-dressing would never answer. The result has been however so encouraging in producing green grass, that at this time we plough but one field a year, and hope ere long to be able to sustain a cow on every two acres of sod, with pasture in summer and hay in winter.

Isaac W. Roberts, Esq., of Lower Merion, well known as an eminent farmer, has a field in grass, which has not been ploughed for nearly a quarter of a century, and which he considers the most profitable on his place; and there are examples in England, of pastures being preserved for a century.

It must be a source of high gratification to the German population of Pennsylvania, that in the career of experimental and scientific agriculture, their father land is in advance of the other nations of the world. Ignorance and egotism have too long withheld from Germany, the homage due to the highest order of intellect, and a persevering industry unparalleled by any other people; and in addressing an audience, many of whom claim that country for their father land, it may be pardonable to advert to her titles to respect.

In Agriculture: Liebig, Thaer, and Burger.

In Poetry: Goethe, Schiller, and Klopstock.

In History and Antiquities: Niebuhr, Heeren, Hurter, and the brothers Schlegel; and that model of travellers, Baron Hum-

boldt; with a host of authors, whose annual literary labours equal those of France and England combined; all vindicate her title to the respect and gratitude of mankind.

She also from remote periods of antiquity, by her conquests and emigrations, scattered far and wide the seeds of liberty, and it is equally to Germany, that Franks, Goths, Lombards, and the Saxons of England, owe the spirit and substance of free institutions. And though Germany dwells at present in apparent apathy, yet we have reason to believe that the intelligence of that land is silently preparing for a bloodless revolution. The immigrants from no other country slide with more alacrity and ease into their duties as citizens of this republic.

But it is as farmers, that we desire to speak of the German population of Pennsylvania; and surely no man who has travelled and observed, can doubt that in the particular line of farming which seems most congenial to their habits, viz: the production of wheat, they are surpassed by none. It may be remarked that they follow this up by their skill as millers, and persevering to the end, we find them established in our towns and cities, as bakers, to the exclusion of all competition.

Among the many disparaging stories current with a class who measure all by their own puny standard, was one some years ago, which attributed to Pennsylvania a tendency to Agrarianism. An eminent jurist of a neighbouring State, who yet survives to do honour to his country, listened to these charges, and at length decided to become personally acquainted with a people from whom such evils were expected. I met with him on his return from a tour through one of the richest agricultural districts of the State; perfectly relieved from his apprehensions and amused at his own credulity. "Sir," said he, "I fear no political danger from a population with such wives and children; with such barns, houses and lands, and with the habits of persevering industry, peculiar to your German population."

For the attention and kindness with which you have this day honoured me, you will please to accept my hearty thanks. It is however but an additional instance of your readiness to welcome to hospitality and "*freundschaft*," all who with honest views and fair intentions, desire to enlist themselves in the ranks of the Montgomery county farmers.

Our winter has not been a severe one, yet little opportunity has been afforded for the plough to operate.

Vinegar Making.

By PROF. L. D. GALE.

Good vinegar is not universally found amongst the farmers of our country. In the Western States it is rare to meet with a good article, and yet it is as easy and practicable as any other product of the farm. In New England, vinegar is generally made from apples, by throwing aside into an empty cider barrel stationed in the garret, all the drippings of cider, sour beer, &c., and drawing out from time to time for the uses of the table, and for pickling.

In the Western States it is often made of diluted whiskey, mixed with sour beer and other fermenting liquors.

In Texas it is frequently made by sour or green grapes, and the washings of whiskey barrels. This makes an inferior article, being a mixture of acetic acid or true vinegar, and a combination of tartaric acid and potash. Vinegar is an article of great antiquity, it is often mentioned in the Old Testament, and is manufactured both here and in Europe, by two general processes, all others are but modifications of the one or the other of these. The first is the distillation of wood in iron cylinders, and condensing the acetic vapor by cold water: the second consists in the acetic fermentation of saccharine or alcoholic liquids.

In England the vinegar is made either from the distillation of wood, or from the fermentation of malted liquors.

In France it is manufactured from sour wines, and hence the name *vin-aigre*—wine-sour.

In Germany it is made both from sour wines and from whiskey. English vinegar generally contains sulphuric acid. Indeed, this is allowed by government to the amount of two to five per cent. As this prevents the formation of mother, which is a vegetable substance, I presume this object must constitute the basis of the permission. I am somewhat strengthened in this view, from having been applied to by an American, who had shipped vinegar to England, desiring to know how he could prevent the formation of "mother" in vinegar, as much had accumulated in the article sent out, which could not be sold on that account. The remedy in such a case is sulphuric acid two or three per cent.

Many years ago it required months to make good vinegar, but by the aid of science and much practical skill, the Germans have introduced a process by which the work of months is brought within the compass of a few hours. The best of vinegar is now made in from two to four hours.

In a standing cask eight feet high, and four feet in diameter, it is practicable to make thirty to forty gallons in a day of twenty-four hours.

The apparatus used in the quick, or German process, is very simple in its construction, and is easily made.

It may be made of one length of stave, as here represented, or of two whiskey, or molasses hogsheds; or lastly, it may be made of two wine butts: the latter, perhaps, is preferable. The chimes of the lower one, and the lower chime of the upper, are to be trimmed off, so that the upper casks may be received into the lower one. But previous to this operation, the upper part of the lower cask, and both heads of the upper one should be removed, and the cask made clean. Now set it in its place, and bore eight small holes, say half an inch in diameter obliquely downwards, for the purpose of supplying air to acidify the vinegar stock. The direction being for the purpose of preventing any vinegar from running out at the holes.

We will suppose the stand set up in its place, the next step is to fill it with beech or other shavings. This wood is the best, but other wood may be substituted, as black birch, ash, white or black oak, white poplar, &c. The last is often used, but soon becomes bad and should be renewed at least once in three years, and besides, the vinegar has a slight bitter taste. Any kind of maple that splits well will do. The shavings should be made in a particular way; they should be the thickness of an eighth of an inch, twelve inches long, and rolled into a coil. They should be an inch or an inch and a half wide.

They are best made by planing with a wide and open-mouthed plane from the edge of a plank cut into twelve or fourteen inch lengths.

The next thing to be done, is to fill up the stand to within eight inches of the top, and there support by means of wooden pins, a hoop on the inside, sufficiently thick to support on it a false head filled with quarter holes; say two inches apart, and with two chimney holes one and a half inch diameter, for the purpose of ventilation. The stand is now ready for working, and is put in operation by procuring sufficient good vinegar to thoroughly wet the shavings, by pouring it on the false head. The attainment of this point is known by the liquor running out freely through the faucet below.

Put a thermometer in one of the chimneys, lay a cover over the top and leave the stand to itself. The temperature of the room should be from seventy to eighty degrees.

In from forty-eight to seventy-two hours the thermometer will begin to rise, and will stand from eighty-five to ninety degrees. When it has reached eighty-six degrees, draw out from the faucet a pailful of the vinegar, and pour up as before, and if there be not enough to run again freely through the shavings, more vinegar must be supplied. For a few of the first feedings it may require more than a pailful. The thermometer in the chimney will now sink several degrees, and must be left quiet until the heat comes up to eighty-six degrees, which at first will require several hours; now draw out and pour up again, and so continue to do, at intervals of an hour, until the liquid and shavings are sufficiently soured; which is ascertained by the taste of the vinegar, but still better by analysis.

When the shavings are once well acidified, they will ordinarily heat up so as to require feeding once in an hour, and may be managed in the following manner:

Pour into a reservoir for stock one measure of proof whiskey, and nine measures of pure soft water, and if you have any old cider, or sour beer, you may add one measure of it to the stock reservoir.

Of this mixture you may pour up two and a half gallons, and when it has run through, and the heat has again come up to eighty-six degrees in the chimneys,—say in about an hour—draw out from the faucet and pour up, and let it run through a second time, when if the stand be in good order, the vinegar is finished; otherwise it must be run through a third time, when the heat has again come up to eighty-six degrees. Suppose the vinegar to be finished with the second run, then stock will be fed when the heat reaches eighty-six degrees.

The strength of vinegar is a matter of much importance to the buyer as well as to the manufacturer—it is the absolute quantity of acid contained in a given measure or weight of it, and is generally ascertained by carbonate of potash, which neutralizes the acid. The vinegar to be tested is poured into a glass measure, and a wide-mouthed two ounce vial filled with dry carbonate of potash, and exactly balanced in a small apothecary's scales, and small portions of it added to the vinegar until litmus paper when immersed becomes violet blue, instead of red. Weigh again the carbonate of potash, and deduct the quantity used—it is the representation of the strength of the vinegar tested.

Good commercial vinegar will neutralize thirty grains of carbonate of potash—very strong vinegar, such as is used in white lead works, will neutralize thirty-six to forty

grains. The former requires ten per cent. proof whiskey, and the latter fifteen or twenty per cent.

When a person makes his own vinegar according to the directions here given, he might, if he chose, substitute for the stock made of whiskey and water,—sour beer, cider slops, the washings of cider barrels, &c., &c., and instead of working the stand hourly, or every two hours, as when it is made a business, the vinegar would be drawn out and poured up every time any new material is added to it; and in this case the air holes, instead of being bored eight inches from the bottom, should be at or above the bulge of the lower cask, so as to allow of room for the vinegar to be kept on hand. In this case, the size of the holes for supplying air should be one-eighth of an inch instead of one-half an inch. It may be remarked, that these directions are sufficient for the purposes of the farmer or any one who desires to make his own vinegar, but they are not critical and minute enough for the manufacturer. Much skill and experience are requisite to compete with those already in the business. For it is a distinct and large business, especially in the neighbourhood of New York, where not less than fifteen or twenty thousand gallons are daily made in and about the city, consuming some fifteen hundred or two thousand gallons of proof whiskey.—*Eureka*.

We have never seen any vinegar manufactured in this artificial,—or if our readers would rather,—this scientific manner, at all to equal the genuine article made from good substantial cider. This it is true, is not made in one day, nor in a hundred: it requires time. In order to procure a good article, we have latterly been in the habit of obtaining from our grocer, say a couple of gallons of his best cider vinegar, and mixing that with another gallon of wine vinegar. This makes a condiment worthy of any man's cabbage, and we recommend the city lover of good vinegar to try it.—*Ed.*

HOW TO TREAT BREAD WHEN TAKEN FROM THE OVEN.—Never set it flat on the table, as it sweats the bottom, and acquires a bad taste from the table. Always take it out of the tins, and set it up end way, leaning against something. If it has a thick, hard crust, wrap it in a cloth wrung out of cold water. Keep it in a tin box, in a cool place, where it will not freeze.

We have seen it stated, that ten thousand barrels of onions are annually raised in the adjoining towns of Salem and Danvers, in Massachusetts.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, SECOND MONTH, 1847.

THE distresses in Ireland and Scotland, on account of short crops, do not by any means appear to abate. We who are here in the midst of plenty, and prosperity, cannot realize the horrors of neighborhoods suffering for lack of food, or of individuals dying with starvation. In her speech from the throne at the meeting of Parliament on the 19th ult., the Queen calls the attention of her legislature with the deepest concern, to the dearth of provisions which prevails in Ireland, and in parts of Scotland. In Ireland especially she says, "the loss of the usual food of the people, has been the cause of severe sufferings, of disease, and of greatly increased mortality among the poorer classes." Louis Philippe, also in his addresses at a late opening of the Chamber, adverts to "the sufferings which this year press upon a portion" of the French population, and asks that every facility may be afforded to his government, to administer the needed relief.

Bread stuffs and provisions, generally, have taken a still further rise in our markets, and large amounts are continually shipped to England. Contributions throughout the country are liberally handed over to be transmitted for the alleviation of the necessities of the destitute and perishing. Wheat flour is worth \$6 to \$7—wheat, \$1.30 to \$1.40 per bu.—corn, 80c. to 100c., while pork and beef are from \$5.50 to \$7, per hundred, according to quality.

We would invite attention to the article on the improvement in carriages—more particularly in so far as the axles are concerned. See p. 212.

A month ago we published Morris Longstreth's answers to certain inquiries made by the State Agricultural Society of South Carolina. In our present number will be found an Address delivered by the same individual on the 11th ult. before the Jeffersonville Agricultural Association. The Society requested a copy for publication, and one was kindly forwarded for insertion in the Cabinet. We copy from the *Norristown Register*. On comparing it with the article referred to above, a little repetition may be observed, but we concluded it were a pity to diminish its value as a whole, by any omissions: it is therefore given entire.

Since the publication of our last number we have been advised by the Chairman of the Committee, whose names appear to the *Report on Measures* on page 192, that that Committee do not endorse the sentiments expressed in that Report—that they never saw it before its publication—and that their names were used without their authority or consent. We took it from a pamphlet containing the transactions of the New Castle Agricultural Society.

THE quantity of rain which fell in the 1st month, 1847, was 4.73 in.
Penn. Hospital, 2nd mo. 1st.

Through the courtesy of our friend Thomas B. Florence, Secretary of the Board of Controllers of the Public Schools of the city and county of Philadelphia, we have been furnished with detailed accounts of the operations of the Board for the year ending the last of 6th mo., 1846.

We have looked over them with great interest, and could not avoid being favourably impressed with the advantageous working of the extended machinery. The statements in relation to the Central High School are particularly valuable.

The aggregate expenditures of the Public Schools of the county for the year, was \$347,418.34. The number of children in the schools at the date of the Report was 37,925, and the number of Teachers 561, of whom 80 were males, and 481 females.

Three months ago on page 131, we gave an excellent receipt for curing hams. Many of our readers know that after they are cured and smoked, it is oftentimes no easy matter to keep them satisfactorily through the warm season. The Editor's plan—and it is the best we have fallen upon in a practice of more than thirty years—is, to envelope the ham completely in two or three newspapers, and put it in a muslin bag. Let there be a string put through the hock, say six or eight inches long, by which it may be hung up—draw the mouth of the bag tight, and tie it round the string. It is better to let the ham, when suspended in the closet or cellar, bear upon its own string, rather than upon that of the bag in which it is enclosed. The bag will be injured, if the ham bears upon the bottom of it.

The 8th No. of Colman's Tour, treating of Crops, Live stock, Dairy Husbandry and Manures, has come to hand, and will be found of equal interest with any of its predecessors. H. Colman is now on the continent, and the succeeding two Nos. will probably treat on the agriculture of the parts he may visit. We would much like to furnish more of our subscribers with this highly valuable work. Price complete in 10 Nos., \$5.

SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

Fruit & Ornamental Trees.

THE subscriber offers for sale an extensive assortment of Fruit & Ornamental Trees of the most approved varieties, of fine size and warranted true to their respective names. Orders may be left with J. Tatum, No. 50, N. Fourth street, where catalogues may be obtained or E. P. Middleton, No. 9 Market st.

EZRA STOKES,

Mt. Laurel, near Moorestown, Burlington co., N. J.

Second month 1847.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoo Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Gleanings in parcels to suit purchasers.

M. S. POWELL.
tc.

Philad., Feb., 1846.

PRAIRIE FARMER,

Devoted to Western Agriculture, Mechanics, and Education;

VOL. 7, 1847.

Published monthly, at Chicago, Illinois, by

JOHN S. WRIGHT:

Containing 32 very large octavo pages, besides a coloured cover of 16 pages, with advertisements, anecdotes, &c., and liable only to single newspaper postage.

JOHN S. WRIGHT & J. AMBROSE WIGHT, Eds.

TERMS—\$1 per annum, six copies for \$5, thirteen for \$10, payable invariably in advance. All communications must be sent free of postage.

Every intelligent person at the East or South wishes to know, or should wish to know, the condition and progress of the West. Therefore they should take and read the *Prairie Farmer*, which will supply them with more reliable information than they can obtain in any other way, unless they spend hundreds of dollars in travelling.

This is no ephemeral publication, for it has reached its seventh year, and has a circulation of nearly 5000 copies, chiefly at the West, and has at least a respectable standing among kindred publications. The matter is almost wholly original, and a large share is supplied by correspondents, more than 350 in number, from all parts of the West, which makes the paper practical, and western in its character; and being published chiefly for home circulation, there is no attempt to exaggerate or deceive. The information can be relied upon as *truthful*.

The SIX BACK VOLUMES, stitched in covers, subject to newspaper postage, and the 7th, as issued, will be sent for \$5; and there are no works published which furnish so large an amount of information concerning the West, or its agriculture.

We really think there is abundance of truth in what our friend J. S. Wright says above of the value of his paper; and certainly every farmer west of the mountains, and many hundreds east of them, after having always of course, first subscribed and paid for the *Farmers' Cabinet*, can hardly spend a dollar to better purpose, than by securing it at once. It will give us pleasure to receive subscriptions at this office for the *Prairie Farmer*.—Ed.

Valuable Farm at Private Sale.

THE subscriber offers for sale the valuable FARM on which he has resided for a number of years past, situated in East Bradford Township, one mile west of the flourishing Borough of West Chester. It comprises about 60 acres of naturally fertile and well improved land, under good fence, and well watered. The buildings are of stone, large, and in good repair. The mansion is pleasantly situated, possesses many conveniences, and is of modern finish, 44 feet front-by 33 feet deep, with an eight feet entry, two rooms on each side, besides kitchen and wash-house, and six rooms in the second story. Pure water is introduced into the house and barn-yard by means of a force pump and water wheel propelled by a never failing stream.

The grounds are planted with fruit, ornamental trees and shrubbery, with a good orchard in full bearing. There are also a three-story barn, 40 feet by 56 feet, a carriage-house, work-shop, ice-house, wood-house, and an excellent and convenient milk-house.

This property is eligibly situated on the main road from West Chester to Lancaster, in an unexceptionable neighbourhood, and offers considerable inducements to one wishing to retire from active business, or to engage in agriculture on a moderate scale.

Apply to the subscriber, residing thereon, or to John Lippincott, No. 65 Marshal street, Philadelphia.

CHARLES LIPPINCOTT,

21. West Chester, Chester county, Pa.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE, AT D. O. PROUTY'S AGRICULTURAL WAREHOUSE, No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$5 00 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—17.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.

Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA

AGRICULTURAL WAREHOUSE,

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW

Horticultural and Agricultural Ware-house,

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

THE subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Tenth month 15th, 1846.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. B. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier, AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUIST'S ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEDIG'S AGRICULTURAL CHEMISTRY,	25
“ ANIMAL CHEMISTRY,	25
“ FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

✂ We are prepared to bind books to order.

GUANO.

TWENTY-FIVE tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by
S. & J. J. ALLEN & CO.,

No. 7 South Wharves, 2nd Oil Store below
Market street, Philadelphia.

October 15th, 1845.

tf.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, for seven barrels or more, \$1 75 per barrel, containing four bushels each. Any number of barrels less than seven, \$2 each, or thirty-five cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for wheat.

JOSIAH TATUM.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

TERMS.—One dollar per annum, or five dollars for seven copies—payable in advance.

All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. XI.—No. 8.]

3rd mo. (March) 15th, 1847.

[Whole No. 146.]

PUBLISHED MONTHLY,
BY JOSIAH TATUM,
EDITOR AND PROPRIETOR,
No. 50 North Fourth Street,
PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.
Pruning Young Trees.

As the time will soon be here when many commence to *mutilate* their orchards and nurseries, it may not be inappropriate to make some remarks on the best manner of, and time for, performing this important operation.

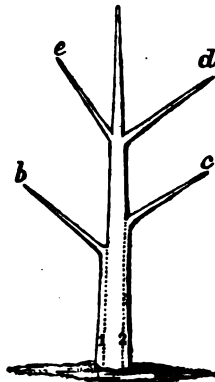
The following system I have practiced for years and taken some pains to inculcate, and if its importance can be brought before a class who rarely read, and *never purchase*, such valuable works as Downing's, Thomas', or Elements of Vegetable Physiology, my object will be accomplished.

Trees of two years growth—and here let me remark, that if trees of proper form—not too high, and sufficiently thick near the earth to sustain their height, were more in demand, interest, if no higher motive, would soon prompt nurserymen to furnish such, instead of the switches now offered—are preferable. These, if properly grown, will require, when transplanted, no stakes to destroy

CAR.—VOL. XI.—No. 8.

their bark, retard their growth and circulation of sap, but may be fastened by raising around their base a hillock of earth six or nine inches high.

Discrimination and judgment now become necessary, because the stalk increases in thickness only as the number of branches and leaves increase; therefore, permit all new shoots to grow one year,—at least enough to keep up a due proportion between thickness and height. The ascending sap undergoes changes in the leaves, and only then returns as *proper juice*, to deposit a layer of wood; it will therefore be perceived by the annexed rude drawing, that if the



branches *b* and *c* be removed early in the season, the trunk will then receive a woody (233)

layer only from *d* and *e*; but if *b* and *c* had not been removed, then an additional layer 1 and 2 from them would have increased the thickness in proportion to their amount of leaves. After the first year's growth, we may occasionally remove or shorten some of the largest branches,—permitting young shoots to grow,—about midsummer, or at any time while full of leaves; because then the descending *proper juice* will soonest repair the injury. The reason for removing some, and permitting other shoots to grow, is obvious. If removed before attaining to large size, the injury to repair will be less and sooner accomplished. After the trunk has size and strength to sustain a good top without growing crooked, at what height should be the first branches? When ploughing and thorough cultivation are to be performed (and in orchard culture they always should) seven feet from the ground is quite low enough. Some prefer eight or nine. There is a difference, too, in the growth of trees. The yellow Bellflower and Smokehouse, both well adapted to—and the latter originating in—this State, require to be trimmed high.

How long, some one asks, will it require to do all this; and will not early bearing be thereby retarded? There are trees in this neighbourhood of eight years growth—five from the nursery and three when procured—which are twelve and a half inches in circumference one foot from the ground, and nine at the first limb six and three-quarter feet from the ground, perfectly straight, which have never borne fruit it is true; but is it not preferable to have trees grow rapidly while young—which is always antagonistic to the production of fruit buds—and form fine large heads that will eventually bear a greater quantity and finer fruit? After the head is properly grown, large branches should never be removed, and if properly attended to annually, it will never be necessary. It will facilitate reparation if some water-proof composition be applied when branches are removed. Tar and brickdust, (Thomas) gum shellac dissolved in alcohol, (Downing) or equal parts of lard, tallow and beeswax, melted together and stirred while cooling, will answer very well. J. K. E.

Lancaster co., Feb. 23rd, 1847.

From the Cultivator.

Poudrette on Indian Corn.

I SELECTED a part of my field, an acre of ground, and manured one half of it in the hill, with five bushels of poudrette, manufactured in Philadelphia. The rows and hills were each four feet apart. The ground selected was, as near as I could judge, of

the same quality; if there was any difference, it was in favour of that part not manured. The soil was a light micaceous loam, but quite thin, as you will see by the yield. It came up finely; the corn on the part that was manured, grew vigorously, keeping far ahead of the other, throughout the season, and ripening at least one week earlier. When harvested, the part that was manured yielded thirty-three baskets of ears, making sixteen bushels of shelled corn, and the other half only seventeen baskets, or eight bushels—leaving me eight bushels of sound corn to pay for the poudrette. The

Dr. and Cr. account would stand thus:

8 bush. corn at 60 cts. per bush., is	\$4 80
Extra fodder—there was at least double the quantity on this part that there was on the other,	1 00

\$5 80

Dr. To 5 bus. poudrette, 35 c. is
 1 75 |

Spreading the same,
 0 10 |

Husking, hauling and shelling 8 bus. 3 c.
 0 24 |

2 09

Gain by using this manure (per $\frac{1}{2}$ acre) \$3 71

A part of the same field was manured in the same manner with guano, and at the same cost per acre. One barrel of guano was mixed with two of unlixivated ashes, and the same quantity of clear sand, and spread on one and an half acres of ground. This part neither grew so well, nor did it yield so well as that along side of it, which had been manured with poudrette. Although we took great pains to sift and mix it thoroughly, yet many of the hills were killed, and some so stunted that they did not recover throughout the season.

One of my neighbours seeing what poudrette had done for me, for two years in succession, on my wheat crop, planted some two or three acres, of as poor land as you could find anywhere—in fact the soil had been entirely washed away—with what we call Canada corn, and manured it in the hill with this manure; a part he left unmanured. On the first part he had a fair crop; but upon the other there was not enough, I had almost said, to pay him for his seed, certainly not for his labour.

What these manures may do, when used upon soils of a more productive quality, I do not know, but I am well assured, that when used upon thin soils, this is a most valuable manure; and those of us in this neighbourhood, who have used it in this manner, firmly believe that we receive the price of our

labour and expenses, in the increased value of our provender alone. The coming season I shall plant my corn on soils of various degrees of fertility, and shall then test the matter more fully.

PENNEPAEK.

Lower Dublin, Pa., Dec. 19th, 1846.

Premiums of Agricultural Society.

At a stated meeting of the Philadelphia Society for promoting Agriculture, held on the 3rd inst., A. S. Roberts, President, in the chair. After the minutes of the last meeting were read, the committee appointed at a former meeting to prepare a list of crops for which premiums should be offered the ensuing season, made the following report, which was adopted, to wit:

For the best field of wheat, not less than three acres, \$10.

For the best field of rye, not less than three acres, \$8.

For the best field of oats, not less than three acres, \$6.

For the best field of corn, not less than five acres, \$10.

For the best lot of potatoes, not less than one acre, \$10.

For the best lot of sugar beets, not less than half an acre, \$6.

For the best lot of ruta-baga, not less than half an acre, \$6.

For the best lot of carrots, not less than one-quarter of an acre, \$6.

For the best lot of parsnips, not less than one-quarter of an acre, \$6.

For the best lot of field or flat turnips, not less than half an acre, \$6.

For the second best crop of each of the above, a copy of Colman's Journal will be awarded.

On motion of S. C. Ford, a committee was appointed for the purpose of fixing the time and place of holding the Society's annual exhibition, and to report thereon at the next stated meeting. Extract from the minutes.

AARON CLEMENT, *Rec. Sec.*

Philadelphia, March 5th, 1847.

Dairy Husbandry.

ENGLAND has long been celebrated for its dairy products, at least for the quality of its cheese; and this is often of a superior description.

1. *Butter.*—The butter in England is, much of it, delicious, especially that which is made in private families, where it is churned from new and sweet cream every morning, and brought fresh from the churn to the breakfast table; and more particularly

when the butter is made from the cream of an Alderney cow. The common market and shop butter, however, is of the same various character with that in our own markets, with no larger proportion of very excellent butter than is to be found in the markets of Boston, New York, and Philadelphia. Indeed, much of the butter found in the market of the last named city, for its freshness and deliciousness, is nowhere surpassed. The butter in England is generally sent to market fresh, and you are left to salt it at your pleasure, as you use it. The salted butter, in tubs or firkins, is mostly imported from Ireland, or the continent. Even this, however, is not heavily salted. In most of the markets a good deal of butter made from the whey of cheese, is sold at a reduced price. It is of inferior taste and quality, and is bought by the poor, or to be used in cooking, where, like a good many nameless things, it may be thoroughly disguised, and pass without detection.

The Dorsetshire butter, which stands at the head of the market, comes packed in neat casks of about thirty pounds each; but is very lightly salted, and of course will not keep long. It is likewise sent up to London in lumps, perfectly fresh for the table. Its quality is excellent. The table butter likewise, from Epping, and especially Aylesbury, is of the best description.

The Devonshire butter is almost universally made by first heating the milk, just so much as to cause the escape of the fixed air. In twelve hours the cream is all brought to the surface, and in a state of consistency to be easily taken off. It is a disputed point, whether as much butter is obtained in this way as by the ordinary mode of letting it stand, without being heated, a much longer time. The butter is thought to acquire in this way a peculiar taste, but it is by no means unpleasant. The skimmed milk remaining is perfectly sweet, and appears the richer for being heated. In this way is obtained the famous clotted cream which is to be found on the hospitable tables of Devonshire, and is a great luxury.

Glass milk-pans, made of bottle glass, are much approved, and with proper care, are in no danger of being broken. They recommend themselves by their cleanliness and incapacity of rust, or corrosion, or decomposition. In some dairies I found shallow leaden troughs used for setting the milk, with a tap at the bottom, so as to draw the milk off and leave the cream. Some persons maintain that, the more shallow the pan, the more cream in proportion will be obtained; but in a large dairy in Scotland, the milk is always set in deep casks and

tubs. Such is the diversity of opinion every where prevalent. The Scotch had no fears that the cream would not find its way to the surface unless the principle of gravitation were to be reversed. One of the best dairy women in the country never suffers any water to be applied to the butter when taken out of the churn, a practice not uncommon.

2. *Cheese*.—English cheese has long been celebrated for its excellence, but it is far from being all equally good. The Stilton cheese stands, by general admission, at the head; the Cheshire, the Cheddar, the Gloucestershire, and the Wiltshire, have their different partisans, and though they differ from each other, are preferred according to the particular tastes of those who eat them. The celebrated Dunlop cheese of Scotland, which is certainly excellent, is made with one fourth part of ewes' milk.

It cannot be expected that I should go into all the processes of the dairy. My remarks must be general. All dairymen seem to agree, that, in cheese-making, much depends on the character of the soil upon which the cows are fed. Wet and low grounds, producing a rank and coarse herbage, are unfavourable, and so are the artificial grasses given to the cows green. An old pasture and a dry soil are most desired; and it is said, that the poorer the pasture, the better the cheese. Wet and cold pastures have been converted into good cheese grounds by thorough draining and cleaning. The quality of the cheese depends, more than upon anything else, upon the skilful and careful management of the dairymaid herself. This is to be learned by practice, and very little useful direction can be conveyed in words. The making of cheese is a chemical operation. We shall be glad when chemistry is so applied as to determine the rules by which success may be made certain.

The average quantity of cheese made is reckoned at one hundred and twelve pounds to one hundred gallons of new milk. Few cheeses are made wholly of new milk, being in general what are called *two meal* cheese, and the cream being taken off the previous night's milk, to be converted into butter. In this case, according to the practice of an excellent Vermont farmer within my knowledge, the buttermilk would go back to the cheese and serve to enrich it. The cheeses in general are made very hard, which is owing, in the first place, to cutting the curd very fine, and next, to the severe pressure which is given to them. The rennets are here called *vells*; and the best are imported from Ireland. At one of the principal dairies which I visited, it was customary to put six

skins, at the beginning of the season, into two gallons of brine, and use this liquid for forming the curd, in such quantities and at such time as required. A quantity of lemon was also put into the liquid, to correct the taste and give it a flavor; but I believe with no advantage to the cheese. It is strongly urged not to use the rennets until they are a full year old, as otherwise they cause the cheese to heave and to be full of holes. In most dairies it is customary to scald the curd with hot whey, but by the best dairymen this is disapproved, as tending to impoverish the cheese. The colouring the cheese with annatto is not universally practised, nor does it much benefit the sale, where the character of the dairy is known.—*Colman's Tour*.

Subsoils and their Management.

THE efficiency of soils for producing good crops, depends much on the subsoil. If this consists of impervious clay or hard-pan, so as to oppose a ready escape to the water, it is evident the accumulation of the heavy rains will materially injure the vegetation above them; for it is certain that while nothing is more essential to productive crops than an adequate supply of moisture to the roots, nothing is more injurious than their immersion in stagnant water. When such is the character of the subsoil, it should be under-drained if possible, or if this be not practicable, it should be broken up and loosened by the use of the subsoil plough.

A variety of ploughs have been constructed for this purpose, but unless it be intended to deepen the soil by an admixture of manures, care should be taken to avoid bringing up the subsoil to mix with that on the surface. In addition to the more ready escape of water thus secured by breaking it up, the air is also admitted, which enables the roots to strike deeper, and draw their nourishment from a much greater depth. The increased distance through which the roots penetrate, furnishes them with an additional moisture during a season of drought, thereby securing a luxuriant crop when it might otherwise be destroyed. This is frequently a great item in the profit of the farmer; as besides the increase of crop which follows a hot dry season when a full supply of moisture is furnished, the product is usually of better quality; and the general deficiency of agricultural produce which ensues from seasons of drought, makes his own more valuable.

As a result of this practice, there is also a gradual increase in the depth of the soil, as the fine and more soluble particles of the richer materials above are constantly work-

ing down and enriching the loosened earth below; and in time this becomes good soil, which in proportion to its depth increases the area from which the roots derive their nutriment. So manifest are the advantages which have followed the use of subsoil ploughs, that they have been extensively introduced of late years among the indispensable tools of the better class of agriculturists.

When the subsoil is loose and leechy, consisting of an excess of sand or gravel, thereby allowing the too ready escape of moisture and the soluble portions of manures, the subsoil plough is not only unnecessary, but positively injurious. In this case the surface soil should be somewhat deepened by the addition of vegetable manures, so as to afford a greater depth, through which they must settle before they can get beyond the reach of the roots; and the supply of moisture is thereby greatly augmented. It is better, however, to keep lands of this character in wood, or permanent pasture. They are at best ungrateful soils, and make a poor return for the labour and manure bestowed upon them.

If there be a diversity in the character of the sub and surface soil, one being inclined to sand and gravel, and the other marl or clay, a great improvement will be secured by allowing the plough to reach so far down as to bring up and incorporate with the soil some of the ingredients in which it is wanting. This admixture is also of remarkable benefit in old or long cultivated soils, which have become deficient in inorganic matters and in their texture.

The effect of long continued cultivation, besides exhausting what is essential to the earthy part of plants, is to break down the coarser particles of the soil, by the mechanical action of the plough, harrow, &c., and in a much more rapid degree, by the chemical combinations which cultivation and manuring produce. A few years suffice to exhibit striking examples in the formation and decomposition of rocks and stones. Stalactites and various specimens of limestone, indurated clays, sandstone and breccias or pudding stones, are found in favourable circumstances, almost under our eye; while some limestones, shales, sandstones, &c., break down in large masses annually, from the combined effect of moisture, heat and frost. The same changes on a smaller scale, are constantly going forward in the soil, and much more rapidly while under cultivation. The general tendency of these surface changes is towards pulverization. The particles forming the soil, from the impalpable mite of dust to the large pebbles, and even

stones and rocks, are continually broken up by the combined action of the vital roots and the constituents of soils, by which new elements of vegetable food are developed and become available, and in form so minute, as to be imbibed by the spongioles of the roots, and by the absorbent vessels, they are afterwards in their appropriate places in the plant. Where this action has been going on for a long period, a manifestly beneficial effect has immediately followed from bringing up and mixing with the superficial earth, portions of the subsoil which have never before been subject to cultivation.

A subsoil which is permeable to water, is sometimes imperceptibly beneficial to vegetation, not only by allowing the latent moisture to ascend and yield a necessary supply to the plants, but a moisture frequently charged with lime and various saline matters, which the capillary attraction brings from remote depths below the surface. It is probably from this cause that some soils produce crops far beyond the yield which might be reasonably looked for from the fertilizing materials actually contained in them. This operation is rapidly going forward during the heat of summer. The water thus charged with saline matters ascends and evaporates at and below the surface, leaving them diffused throughout the soil. After long continued dry weather, a thin white coating of these salts is frequently discernible on the ground.

Where rain seldom or never falls, this result is noticeable in numerous and sometimes extensive beds of quiescent—not shifting—sand. Deposits oftentimes occur several inches in thickness. Such are the impure muriate of soda and other salts in the arid deserts of California; in the southern parts of Oregon; the nitrates found in India, Egypt, Peru, and various parts of the world.—*Allen's American Agriculture.*

From the Cultivator.

Farming in Holland.

ANTWERP is not at a very great distance from the Dutch frontier. The border land between Holland and Belgium, is a wide desolate looking tract of sandy moor, for the greater part entirely neglected. There was, however, in many places, a considerable thickness of organic matter above the sand, which would go far towards making an excellent soil. In some places I saw holes where a substance resembling marl or clay, had been raised to the surface and laid in heaps. Were it either marl or clay, it would be highly useful on such light sandy soils. Great improvements are commencing

here, and some flourishing farms begin to appear amidst the surrounding desolation.

The Crown Prince has large possessions on these moors, and energetically promotes and encourages everything promising to advance cultivation there.

I was not able to ascertain, except by a hasty glance in passing, the system upon which these improvements proceed. Each one of the fields was enclosed by an open ditch, that indispensable accompaniment of a Dutch farm. In many cases, the turf, bushes, &c., &c., were burned, being collected in heaps; and the ashes afterwards spread over the whole surface.

After passing Grootrusliert, the first town in Holland, we entered a fine agricultural district. The crops were all thriving, and the fields bore evidence of careful and laborious attention. This district, North Brabant, seems to be all drained as thoroughly as the nature of the case will admit. The summer level of the water is generally not more than 18 inches or two feet below the surface, and there is scarcely any fall; in the winter the whole country is frequently covered with water for months. The houses placed on slight elevations, and the roads on embankments, are alone visible. Such was the case in January of the present year, when I passed through this very district. These circumstances all united, render it necessary to make the drains large and open, thereby interfering, of course, to a considerable degree with economical cultivation. These ditches become grown up and choked with weeds every year; in all directions we saw men cleaning them with a species of rakes, drawing the vegetable masses brought up directly into boats, or forming heaps on the land. These cleanings of the ditches must form an important item in the Dutch farmer's list of available and effective manures. In some places I have seen men dipping up the black muck from the bottoms of the canals, and laying it up in heaps on the banks. This mud, from its black appearance, must be rich in vegetable decomposing matter, and very well fitted to form compost heaps, or even to spread directly upon the land, after a winter's exposure to frost and warmth alternately. The large ditches on almost every farm form a kind of canal, navigable by boats carrying several tons; in these manure is often carried from one part of the farm to another, and the products of the various fields brought home. On some of the farms, horses would scarcely be necessary, except for ploughing. Farm vehicles seemed very few in number, and those few awkward in shape, especially the wagons, with high

and narrow bodies, greatly elevated from the ground, and rising at both ends. From the forward axletree a stick three or four feet long turns upwards, and curls over towards the front board of the wagon box; this is generally terminated by a brass knob, which, in well regulated establishments, is kept scoured to a great degree of brightness. I had no opportunity of seeing any of the farming implements. I expect to find the Dutch far behind in this respect.

About half way between Antwerp and Utrecht, we passed through Breda, a large and very strongly fortified town. It is entirely surrounded by low, marshy ground, and in winter the water in the ditches is nearly on a level with the streets. After leaving this place we came to a broad tract of rich, fertile land, partly a rather stiff clay, but afterwards becoming a fine light loam in appearance. Both of these kinds of soils appeared to be of great depth. The draining was as perfect as possible under the circumstances, and as I have described above; the water standing from eight to eighteen inches below the surface. The crops on the whole of this tract were remarkably luxuriant. Of course we could say nothing as to the grain crops, but the grass and the turnips particularly arrested our attention. The turnips seem universally to be sown broadcast, and are not thinned out; and the consequence is a great mass of leaves and stalks. How large the roots were we had no opportunity of judging. A large farmer living in the neighbourhood of Breda, rode with us some miles, and gave us much information as to his own farm and the practices of the country. I think the Dutch farmers and proprietors in general can hardly equal this gentleman, who spoke French, German, and Italian, and read English with ease. The learning of foreign languages is, however, in so small a country as Holland, a matter of necessity to any one who ever goes a hundred miles from home.

We learned from this gentleman that in his section, at least, the Dutch are very deficient as to rotation of crops; in fact they have no rotation at all; they take as many successive crops of grain as they choose, or as they can. The land there is so good that this system may be carried on for a long time; but in many sections of the country I should think that they would be driven to a different course.

Yours very truly, JOHN P. NORTON.
Utrecht, Nov. 20th, 1846.

A vegetable seldom seen, and little known, the *Celeriac*, was lately produced at our Horticultural Society.

The effect of Whitney's Cotton-Gin on the Cotton Husbandry of the United States.

In 1793, the year of the invention, the whole cotton crop of the United States was 5,000,000 lbs., and the total exportation 487,600 lbs. In 1795, when the cotton-gin was first extensively introduced into Georgia and South Carolina—then the principal region of that production—the whole crop increased to 8,000,000 lbs., and the exportation to 1,601,760 lbs. In 1800, when the machine had been thrown open to the people, without limitation, from regard to the legal rights of the patentee, the total production of cotton in the United States during the year amounted to 35,000,000 lbs., of which 17,789,803 lbs. were exported. In 1805, the whole production was 70,000,000 lbs., and the amount of *upland* cotton exported 29,602,428 lbs.—(value, \$9,445,000.) In 1810, the crop was increased to 85,000,000 lbs., and the exportation of *upland* cotton to 84,657,394 lbs. In 1815, the whole of the United States crop was 100,000,000 lbs., and the exportation of *upland* cotton 74,548,796 lbs. In 1820, the whole United States crop was 160,000,000 lbs.; the exportation of *upland* 116,291,137 lbs., valued at \$22,308,667. In 1825, crop 255,000,000 lbs., exportation of *upland* 166,784,629 lbs. In 1830, crop 350,000,000, exportation 290,311,937. In 1835, crop 475,000,000, exportation 379,000,000. In 1840, crop 880,000,000, exportation valued at \$63,870,307. In 1845, the United States cotton crop was 1,029,830,000 lbs., and the exportation of cotton 862,580,000 lbs.; the domestic consumption being 167,270,000 lbs.

The recent annexation of the immense cotton lands of Texas, the abolition of the import duty on American cotton in Great Britain, and the vast and rapid increase of the manufacture of cotton fabrics in all parts of the United States, are evidences of the certainty of a further increase in the production of cotton in this country. Enormous as has been the progress of this staple, from 1791 to 1845, it is destined to a yet greater extension in amount and value.

The exclusion of East India cotton from its previous monopoly of the markets of the civilized world, from the beginning of the present century, was mainly due to the introduction of the cotton-gin in the Southern States of the American Union, which substituted the rapid operations of machinery for the tedious and costly labour of human hands in the preparation of the crop for the use of the manufacturer. The recent attempts of the British Government and the

East India Company to restore the successful production of cotton in Hindostan, have consisted largely in the introduction of American improvements, especially of "THE AMERICAN COTTON-GIN," into those provinces which are adapted to the culture. The greater cheapness of labour, and even the superior quality of the product—in the province of Dharwar,—were found to avail nothing, without the advantages of American machinery.

The pecuniary advantage of this invention to the United States is by no means fully presented by an exhibition of the value of the exports of cotton—amounting to more than \$1,400,000,000 in the last forty-three years,—nor by the immense proportion of the means which it has furnished this country to meet the enormous debts continually incurred for imports from Britain and the European continent,—cotton having for many years constituted one-half, three-fifths, or seven-tenths of the value of the exports of the Union. But it was the introduction of the cotton-gin which first gave a high value and permanent market to the public lands in the South-West. The rapid settlement and improvement of almost the entire States of Alabama, Mississippi, Louisiana, Florida, and Texas, is mainly due to the enlarged production of cotton consequent upon the invention of Whitney. The States of Georgia and Tennessee have also been largely benefited by the same means in the disposal of their domain, a vast portion of which must have remained unoccupied and valueless, but for the immense increase of facilities for the preparation of cotton for the market. In the three States of Alabama, Mississippi and Louisiana, the sales of the public lands of the General Government amounted to 18,000,505 acres, during the eleven years ending on the 30th of June, 1844—yielding to the national treasury more than \$30,000,000. The sales of *upland* cotton lands by the United States land offices have amounted to many tens of millions of acres; and none have been sold at a lower rate than \$1 25 an acre—a large proportion at a higher rate.

It is to be remarked, finally, that the cotton-gins now in use throughout the whole South are truly the original invention of Whitney—that no improvement or successful variation of the essential parts has yet been effected. The actual characteristics of the machine—the cylinder and brush—the sole real instruments by which the seed is removed and the cotton cleaned, *remain*, in cotton-gins of even the most recent manufacture, *precisely as Whitney left them*. The principle has not been altered since

the first cotton-gin was put in motion by the inventor, though great improvements have been made in the application and direction of the moving forces, in the employment of steady-power, in the running-gear, and other incidentals. Every one of the various cotton-gins in use, under the names of different makers, contains the essentials of Whitney's patent, without material change or addition. The brush and the cylinder remain, like Fulton's paddle-wheel, unchanged in form and necessity, however vast the improvements in the machinery that causes the motion.

A more imposing result of mechanical ingenuity directed to the benefit of a whole nation, and, through it, of mankind, has not been recorded in the history of the human mind. Certainly there is no patriotic American who will not rejoice to accord to this eminently useful, though basely wronged inventor, the judgment so well expressed by Mr. Lanman—that "Whitney earned the credit of giving a spring to the agriculture of the South, which has been continued, unimpaired, to this day—a credit that will endure while the cotton-plant whitens the plantations of the South with its snowy harvests, or the machinery of the cotton-factory clatters upon the waterfall!"—*Skinner's Farmers' Library.*

Observations on Cheese-making.

CHEESE may be made from cream alone, or from the whole milk; the main object in either case being to separate the serum from the other materials. This is effected by curdling the cream or milk *by the infusion of an acid*, the refuse being serum or whey. No acidulous substance is found so suitable for curdling milk as *rennet*, which is formed of the gastric juice of a calf that has been fed on milk. There are various methods for preparing rennet for use, most dairymen having a favourite process of their own; the following can be recommended by the writer as a simple and easy process.

Take the maw of a newly killed calf and clean it, salt the bag, and put it into an earthen jar for three or four days, till it forms a pickle; then take it from the jar and hang it up to dry; after which it is to be replaced and tied down, the covering being pierced with holes to admit the air; and allowed to remain in the jar for twelve months. When wanted for use, a handful of each of leaves of sweet brier, dog roses, and bramble, with three or four handfuls of salt, are to be boiled together for a quarter of an hour, when the liquid is to be strained off and allowed to cool. The maw is then to

be put into the liquid, together with a lemon stuck round with cloves; and the longer it remains in the liquid, the stronger and better will the rennet be; *half a pint* of this liquid is sufficient to turn fifty gallons of milk.

There are various kinds of cheese made in England under the name of Gloucester, Dunlop, Cheshire, &c., each having properties peculiar to itself. I shall confine myself in these remarks to the cheese made in the county of Cheshire, and hence called Cheshire cheese.

It has been remarked, that although good imitations of the cheese made in some of the English counties have been produced elsewhere, yet in *no trial* has a cheese possessing the *true* Cheshire flavor ever been made. This is attributed to the abundance of the saline particles in the earth, resulting from the numerous salt springs in that county. Cheshire is almost entirely a dairy county, its arable husbandry being neither extensive nor of a superior character. It is said to possess from thirty thousand to forty thousand dairy cows; the quantity of cheese made annually is estimated at twelve thousand tons.

In making the cheese the practice followed is this; set the evening's milk *apart* till the following morning, then skim off the cream, put two or three gallons into a brass pan, which must be immediately placed in hot water and rendered *scalding* hot. Half of the milk thus heated is poured upon the *night's milk*, and the other half mixed with the cream, which is thus rendered *thinner*. This is done by the dairy woman while the others are milking the cows; the *morning's milk* being *immediately* added to that of the previous evening, the whole mass is set together for cheese. The rennet and colouring being added, the whole is well stirred, and a wooden cover put over the tub, with a clean linen cloth thrown over it. It in general requires one hour and a half before the milk curdles; and if the cream should rise to the surface in this time, the whole must again be well stirred, which is done every time the cream rises, until coagulation takes place.

When the curd is formed, if it be firm, it is cut with the cheese-knife, and then cut across, making the incisions about an inch distant from each other. The curd is then broken by the dairy woman, until every part of it is made as small as possible, about forty minutes being generally spent at this process, after which the curd is left about half an hour to subside, covered over with a cloth. It is then put into a favourable position into the tub to drain, and a weight of about sixty

is put upon it, in order to press out the whey which is drained to the lower side of the vat and ladled out. When well drained the curd is turned upside down, and pressed again. It is now cut into pieces, about two inches square, which are piled one upon another and pressed both with the hands and with the feet, so long as the whey will come out.

The curd is then cut and broken very fine, at the rate of three hands per hour, and then put into a cheese vat, lined with coarse cheese cloth. The curd is put in the vat in a conical shape, being covered with cloth, to prevent the curd falling off. As soon as the curd is pressed together, a weight of about five hundred pounds is put upon it, and several iron skewers are stuck through it by holes in the sides of the vat. These holes are made in order to allow any whey remaining in the curd to escape. The weight and skewers are then removed, and the curd is broken as small as possible *half way* down the vat. The pressing and skewering are again repeated, and a clean cloth is put over the upper part of the curd, which is then taken out of the vat and put into it again *upside down*, and broken half way down as before. When no more whey can be extracted, the curd is turned into the vat, and rinsed in warm whey. The curd is still kept above the edge of the vat, being bound round with strong tape to keep it in a proper shape.

The cheese is now put into the press which has generally the power of about fifteen hundred weight, and is then well skewered with strong pointed wires, eighteen or twenty inches long. The vat is furnished with holes at the sides to receive the skewers; and after being about half an hour in the press, the cheese is again turned, and supplied with a clean cloth. It is in like manner turned again and again several times for forty-eight hours, each time supplied with a clean cloth, after which it is put *mid-deep* into salt, where it remains for three days, its position being reversed each day. When taken out of the vat, it is put into a wooden hoop of the same breadth as the thickness of the cheese, and is placed on the salting bench for several days, as above mentioned.

The cheese is then washed in lukewarm water, and after being wiped, is placed on the drying bench, where it remains about seven days, being carefully turned each day, after which it is again washed and dried as before, and rubbed over with sweet butter. After this it is placed in the warmest part of the cheese-room, and rubbed each day with sweet butter for seven days.

These cheeses vary in size, being in some

dairies nearly one hundred and forty pounds in weight. The quantity of salt made use of during the process is uncertain; three pounds to a cheese of sixty pounds is thought to be about the amount; but much of this is lost in the salting house. Whether the cheese acquires much saltiness during the steeping and rubbing, is uncertain, though much salt is expended in these operations.

In operations so critical as those of the dairy, where any material alteration in the temperature will affect the quality of the cheese, this ought at all times to be carefully attended to. A thermometer ought not only to be in every milk house, but also in every byre, as extremes of heat and cold, or sudden changes in the temperature, have a great effect upon the secretion of milk. The temperature of the milk house ought never to rise above fifty-five nor sink below fifty degrees.

The usual colouring for cheese is annatto, one pound of which is sufficient to colour half a ton of cheese.

Cheese making in large dairies is very laborious employment. It is said to be work that is never done, and like most other kinds of labour, it is ill remunerated.—*American Traveller.*

Construction and Management of Hot-Beds.

THE prevalent opinion among farmers respecting *hot-beds*, is, that they are expensive articles, requiring the skill of professed gardeners to manage them, and almost entirely outside the range of farming economy. Both suppositions are decidedly erroneous, and we hope that every one who reads this will arrive at such a conclusion. We do not propose that every farmer should go into the regular routine of forcing vegetables, at extraordinary seasons; but that every one, however humble his circumstances may be, should, at least, have one hot-bed to forward such plants as he may want to cultivate in his garden, and which he has either to purchase from gardeners—and then get poor, badly grown things—or else wait for the regular process of open garden culture, which, in our climate, under the most favourable circumstances, will not allow him the taste of a vegetable until the summer is half gone. We are surprised to see farmers come to the city and purchase a dozen of poor, weak withered cabbage, tomato, or celery plants, when they might have raised an abundance at home, far superior, and in better season.

The value of culinary vegetables, as we have often said, is not at all appreciated by

those who, of all others, ought to appreciate it—the professed cultivators of the soil. No effort, worth speaking of, is bestowed upon them, as a general thing. We have seen what is called the gardens of some of the best field farmers in this county, produce little else but *weeds*, at a season when they should have been teeming with all the variety of healthy, nutritious vegetables. Let us urge upon them, for their own sakes, and for the credit of our agriculture generally, the importance of a reform in this regard. In the midst of the improvements of the day, the vegetable garden, that may contribute so largely to the health and comfort of every family, should surely not be neglected. Let it participate, largely and fully, in the improvement, and it will yield ample compensation. This is the season to make preparations while there is leisure.

A simple hot-bed for forwarding plants, such as cabbage, tomato, celery, brocoli, cauliflower, egg-plant, pepper, melons, cucumbers, &c., may be constructed by any man having but ordinary ingenuity. The size may be adapted to circumstances. For raising such plants as we have mentioned, a frame of about twelve feet long and six wide, which will allow of three sashes, each three feet wide, will be found large enough for any family. It should be made of common two inch plank—the back about three feet high, the front about half that, the ends having a regular slope from back to front. This will give an angle sufficient to throw off rain, and give the full benefit of external heat and light to the plants within. If the beds are narrow the front must be higher in proportion. The sides and ends are simply nailed to a strong post, four inches square, or more, placed in each corner. For the sashes to rest and slide upon, a strip six inches wide is placed across the frame, the ends mortised or sunk in the sides of the frame, so as not to cause a projection. The sashes are made in the ordinary way, but without cross bars; and in glazing, the lights are made to overlap an eighth or quarter of an inch, to exclude the rain. Such a frame, costing a mere trifle beyond the labour, will last for years. Where so large a frame as the dimensions here given, may not be wanted, an old window may be used for sash, and all expense of glazing be avoided.

Hot-beds should occupy a dry situation, where they will not be affected by the lodgment of water during rains or thaws. They should be exposed to the east and south, and protected by fences or buildings from the north and north-west.

Where it is intended merely to grow plants for transplanting to the garden, they

may be sunk in the ground to the depth of 18 inches, and will in such a case require not more than two feet deep of manure; but when forcing and perfecting vegetables, a permanent heat must be kept up, and the bed must be made on the surface, so that fresh and warm manure may be added when necessary. A depth of three to four feet of manure will in such cases be wanted. Manure for hot-beds should go through a regular process of preparation. It should be fresh stable manure, placed in a heap, and turned and mixed several times, promoting a regular fermentation; thus it is made to retain its heat a long time, otherwise it would burn and dry up, and become useless.

Those who wish to force cucumbers, radishes, salad, &c., should begin, if the weather be favourable, about the latter end of February. For raising plants it is time enough to begin in March. In forcing cucumbers, Bridgeman says:

"The substance of dung from the bottom of the bed should be three to four feet, according to the season of planting, and the mould should be laid on as soon as the bed is settled, and has a lively, regular-tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish colour and caking, it will be fit to receive the plants, but if the earth appears burned, or has a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm; at the same time vacancies should be made to give vent to the steam, by running down stakes.

"After the situation of the bed has been ascertained and the heat regulated, the hole should be closed and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills plant three seedlings, or turn out such as may be in pots with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the temperature of the bed, and kept shaded till they have taken root.

"The temperature should be kept up to 60 degrees, and may rise to 80 degrees without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well prepared dung must be applied all round the frame. Begin by lining the back part first; cut away the old dung perpendicularly to the frame, and form a bank two feet broad, to the height of a foot, against the back of

the frames; as it sinks, add more; renew the linings round the remainder of the bed as it becomes necessary, and be careful to let off the steam, and give air to the plants at all opportunities.

"Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon, in the advanced season of hot sunny weather. Some use water impregnated with sheep or pigeon dung. As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, for which purpose a supply of good mould should be kept ready at hand, to be used as required.

"When the plants have made one or two joints, stop them, by pinching off the tops, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them also; and afterward continue throughout the season to stop at every joint; this will strengthen the plants, and promote their perfecting the fruit early."

Radishes, lettuce, &c., may be forced in beds similar to that described for cucumbers, and the earth in the dung bed should be a foot deep. They do not require so much heat. The plants require to be well thinned out, air to be regularly admitted, and water gently and regularly supplied. In admitting air to hot-beds, a mat should be thrown over the opening to prevent the plants from being chilled.

Earth for hot-bed plants should, in all cases, be good rich friable loam, mixed with a third of well rotted manure, and some coarse sand to make it porous.—*Chicopee Telegraph.*

For the Farmers' Cabinet.

Corn—Lime, &c.

TO THE EDITOR:

SIR,—In the 6th No. of your last volume I addressed you a note under the signature of "A New Subscriber," and your correspondents having answered my inquiries, ably, in my opinion, I now feel bound to make all due acknowledgment. I say *now*, because I am somewhat more able to judge, by experience, of the advantages of their plans and recommendations.

"Barn." The answer in regard to this is published in Volume 10, No. 8, in March, from Chalkley Gillingham. I have never seen a plan of a barn to compare with it, and if the cost of the work done by his own hands and own materials are included, it is *very cheap*. I had commenced mine when the Cabinet came to hand with the plan, or I should have adopted it.

"Lime." The answer to my enquiries will be found in Vol. 10, page 218, from Dr. Elwyn. To be brief, it is worth more to me than all the information I have heretofore collected on the subject.

"Fattening Hogs," by A Vermont Farmer, Vol. 11, No. 5, page 150. I consider the combination of ingredients economical and good; but I am not instructed as to the mode of building the furnace, and it does not appear in what manner the contents are taken from the cylinder, which is probably ten feet high.

A concise account of the whole, and the *modus operandi*, would confer a favour on,

Yours truly,

E. LEWIS.

Bloomsbury, near Havre-de-Grace, Md.,
Feb. 24th, 1847.

Can some of our correspondents supply the information asked by our friend? The directions in the article referred to are not explicit.—Ed.

Mount Airy Agricultural College.

THE undersigned, having for a series of years devoted himself to the pursuit and practice of Agriculture, and having with deep concern regarded its condition as a Profession or Calling, could not but perceive that there was wanting, something indispensable to give Character and energy to an occupation, acknowledged to be the most useful, and embracing in its extended range the most numerous class of the people of these United States. He has therefore been long convinced that the great desideratum to be supplied, is an Education, commensurate with the high destinies of the Landed Interest—a training in Rural Economy pending the progress of the Student in Literature, so that when he shall graduate, he may not only have achieved the usual attainments acquired in mere literary Institutions, but exhibit a thorough and well grounded knowledge of practical and theoretical Agriculture and Horticulture, and possess in a superior degree, the presumable addition of good health and habits; being thereby the better fitted to enter upon the general duties of life, or into any profession as well as that of Agriculture. This presumed felicitous condition of the Graduate needs no demonstration, for it must be admitted, that the training and exercises of a properly conducted Agricultural College, will be naturally promotive of the priceless blessings of robust health, industrious habits, and a well regulated mind.

In the Eastern and middle States many laudable efforts of late years, have been made to improve and elevate the position of

the Farmer, but in the main, all have proved futile. In vain were Clubs and Societies formed; these could but invoke or inspire others to associate, and spend as they did, a little time and money in the cause; for all must now perceive that Education is the one thing needful, without which all efforts are unavailing, in furtherance of the great object in view. In vain did Capitalists, charmed with the Rural, and desirous of setting an example, purchase Farms, and quit the Cities; for they soon returned in disappointment, if not in disgust. Why? Because they had not been fitted by education for the pursuits of Agriculture. They had to depend on Hirelings, and no money could procure, for it is not procurable, the intelligence and skill adequate to the superintendence of the Yards, Stables and Stock—the Soils and Manures—the Crops and Cropping. Every Planter or owner of a Farm, should therefore be able to direct and instruct in all the leading interests and operations on his estate, for it as much as he can hope, or under the circumstance, expect, if his labourers carry out his orders in the detail.

To educate youth in the leading branches of popular learning as taught in our Colleges, with the addition of practical and theoretical Agriculture and Horticulture, with their attendant sciences, the Undersigned contemplates Founding an Agricultural College at Mount Airy, his residence, eight miles from the City of Philadelphia, a site favourably known for its Healthiness and Beauty, and as having until recently been, for many years, a seat of Learning, and now, in Gardens, Grounds, and Buildings, admirably suited for the purpose.

Students will be admitted at ten years old and upwards. The younger Pupils in the elementary branches of the Scholastic department will receive special and particular attention. The more advanced in years and learning, on entering will be classed according to their qualifications, and all will be carried forward as rapidly and understandingly as practicable, to a perfect and thorough completion. In the Agricultural department, a similar classification will be made in view of the age and capacity of the Students, and their exercises proportioned accordingly. Each little Boy will have his Budding and Pruning Knife, his miniature Rake and Hoe, and in fine weather will daily repair to the Gardens and Nurseries, and there be taught the nomenclature of Plants, flowers, &c., their culture, habits, and properties, and the necessary manipulations of producing: after an hour spent in this healthful recreation, he will return to the Class-room, and resume his studies. As

he advances in years and strength, he will be introduced to the more weighty and important concerns of Agriculture, in which the senior Classes will be engaged. The exercise or labour of all, however, will amount to no more than will be deemed necessary for healthful recreation and change, to diversify and lighten the monotonous and depressing drudgery of the mere student. In this way, by a varied course of study, rural exercise, and popular Lectures, it is intended to accomplish the important work, and to give to Agriculture an impulse that cannot fail to raise it to the rank it should assume, and ought to hold throughout the land.

The Graduates of this College will be Scholars, and Gentlemen, who, if they inherit an Estate, will know more than their Gardeners, Overseers, or Land Stewards,—be conversant with the Breeds, Character, and properties of Stock, the mechanism and use of Implements,—the quality of Soils, and the adaptation of Manures, and withal, practical Surveyors; while the taste acquired for Rural Life, will render the management of their Plantations a pleasing occupation, combining both pleasure and profit. If on the other hand they should have to acquire an Estate, what other Graduates could hope to compete with them in the acquisition of Property and honourable fame?

These views are respectfully submitted by way of Prospectus, affording a glance at the aims and merits of the contemplated Institution, and for the purpose of eliciting such share of patronage as will encourage the undersigned to carry out his long cherished design. If, therefore, eighty students shall offer, on or before the first day of July next, he will open the College on the first day of September following, with a Faculty combining the best talent, both in Literature and Rural Economy.

The Terms will be *Two Hundred Dollars* per Annum, for Board and Tuition, payable half-yearly in advance—no extras, except for Modern Languages, for which it may be necessary to make some additional charge, all of which, when properly matured, will be stated in a special prospectus, when the requisite number of Students shall appear to be forthcoming.

Parents wishing to avail themselves of this plan of educating their Sons, will please address JAMES GOWEN, *Mount Airy, Philadelphia*, stating age, and acquirements in learning. It is requested that early application be made, as the opening of the College is contingent upon the number of Students offering, and as much of the material necessary to its perfect organization

must be withheld, until it is ascertained that sufficient patronage will be accorded.

A word as to the Undersigned himself.—To those who know him, 'tis needless to say, that this great undertaking is prompted by no interested motive whatever; for all the capital to be employed, and all the trouble and anxiety incurred, he expects not a dollar by way of profit or remuneration for his services. He therefore wishes to stand in the proper attitude before all, and leave to all the means of making a fair estimate, and coming to a proper determination so far as they may feel interested.

Respectfully,

JAMES GOWER.

Feb. 22nd, Washington's Birth day, 1847.

Agricultural papers will please copy the above.—Ed.

Soiling Cattle.

By DR. FIELD.

(Read before the Farmers' Club of the American Institute, and communicated for publication.)

THE soiling of cattle has been highly recommended by our agricultural writers, and by many distinguished farmers who have employed the system advantageously.

During the last three years, I have kept my farm stock partially after this plan. I have seen many advantages result from it, but yet have become fully satisfied that soiling can be economically practiced only under certain favourable circumstances.

If land is valuable in consequence of its contiguity to a market, where a good price and ready cash can be obtained for its productions, especially milk; or if the grounds are laid out in lawns, covered with shrubbery, nurseries, young orchards, &c., then, if it is desirable to keep stock at all, it would be unquestionably best to soil them, so also it would be, under almost any circumstances, desirable to soil or keep up working cattle and horses, for they are then always ready for the yoke, or harness, without the trouble of going in the pastures for them; besides, it is much better to feed the animals with that kind of food which would be more proper for them while at work than grass only. Again; much would depend upon the description of produce that the farmer expects to obtain from his cattle. If he intends making butter, or cheese, then the soiling system would not answer. The only plan to obtain a good article of fine flavoured butter or cheese, is to afford the cows an unrestrained range in a good pasture. I think there must be, and it is the opinion of others, much better acquainted with the subject than myself, certain plants growing in the pasture, which give to butter and cheese

their rich colour and flavor, which the cows find when they roam at large. At any rate, I never yet have seen finely coloured butter made while cows were kept up on any feed, and I have fed grass, clover, green oats, rye, and corn, cabbages, turnips, potatoes, beets, &c. I intended, to-day, to exhibit to the club a specimen of butter made from a cow fed with warm swill and hay. It was as white as lard, and almost as tasteless. A few days since I was in the cellar of a country merchant and saw there a number of specimens of butter from some of the best farmers of Dutchess county. Almost every parcel was of a white colour. I am aware there are large quantities of fresh butter sold in the winter and spring that possess a good colour, but only a little experience in the art of colouring is sufficient to give either cheese or butter any desired colour. The greatest advantage to be derived from soiling cows is the quantity of manure that can be obtained from them, and a regular and abundant supply of milk.

According to the experiments of Mr. Pell, which he communicated to the State Agricultural Society, published by them in their Transactions, for 1844, it would appear, that to keep cows, except for their manure, would be attended with ruinous expenses. Five cows gave, each, under the most favourable circumstances, sixteen quarts of milk. Fourteen quarts of good milk are allowed for one pound of butter. I do not believe that sixteen quarts of milk, from soiling, would more than make a pound of butter—at any rate, a cow that would average one pound of good butter per day, is a first rate cow. Estimating this butter at 1s. 6d. per pound, his five cows would yield 7s. 6d. per day. What would such an income do towards paying the expenses of the animals, buildings, land, seed, labour, &c. He made, however, a large quantity of valuable manure, but the bulk of this was straw, weeds, leaves, &c.

To make manure from the stock, it is necessary that they should be either enclosed in a yard, or tied up. The only reason assigned why the manure does not give its full benefit in pasturage is, that a great proportion of it evaporates. Those who soil their cattle, and turn them in a lot, therefore, lose the most valuable substances in the manure. It is, no doubt, better to give the animals the benefit of a small enclosure for exercise, &c., but yet, if it is desirable to make manure, these advantages must be sacrificed. I have always found it was better to keep stock tied up constantly than to suffer them to roam a part of the season; and then confine them at other periods—for they would al-

ways show its bad effects in their milking, and appetite for food. When animals are tied up constantly, but suffered to go to drink at stated intervals, they after a time, become accustomed to it, and do as well, as far as I have observed, as if turned out, especially when the pasturage was not regular, as it sometimes is in dry hot seasons. But yet this was only in reference to their condition and quality of saleable milk, not for the making of butter.

I would recommend that the ordinary crops of the farm, even such as clover or grass, should not be depended upon for soiling. The ground should be especially assigned for the purpose. It should be as near the animals as possible to save labor, and put in the best condition for producing a succession of luxuriant crops. A dry or wet season will then never disappoint the farmer, for if the land is ploughed thoroughly and deeply and highly manured, it will be so loose as to permit the roots to strike deep and obtain sufficient moisture, raised by capillary attraction from below, in case of a drought; or so porous as to permit the ready percolation of water in a wet season. All the crops for soiling should come in in regular order, and not too much ground should be sown or planted at a time, so that the crops may be fed before they are too old and strong. It is often said that these crops are too watery, and that they scour the animals; they do so oftentimes, because the feed is changed suddenly, but after a time they become accustomed to it. Feeding a little dry meal, and giving the animals the privilege of licking clay, will soon check the disorder. Lime water is also very good for that purpose. I believe that the following plan for raising crops for soiling would be found to answer the desired object. Let a proportion of land be prepared by deep thorough tillage and abundance of manure, and sown with rye. Thrice the quantity of seed should be used, and it should be sown about a fortnight earlier than usual. This rule affords the first cutting in the spring. A piece of clover should next be prepared by top-dressing and plaster; this would come after the rye. It could be cut until corn was ready, or as soon as the frost is out of the ground in the spring. Oats and field peas should be sown on rich well prepared ground. This crop will come in after clover, and, I think, would be a good substitute for English tares. It was the most abundant crop I have ever raised on my farm. When the weather is sufficiently warm, corn should be sown broadcast. This will give an abundant supply of feed until late in the fall. I prefer sowing corn broadcast to drills. It is much less trouble, and the stalk is made

more tender. I prefer, too, to cut the corn when it is in full leaf, and not wait any longer. I have conversed with our largest dairymen, who have partially soiled with corn for several years. They all unite in the opinion that it is the best feed to give an abundant yield of milk.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

Lime.

In the January number of the Cabinet, is an article on lime, from "Chambers' Information, &c." in which it is stated that "lime helps to fix the carbonic acid which is generated by the fermentation of putrescent manures in the soil, or which floats in the air on the surface of the earth, and it freely imparts this gas in union with water for the nourishment of plants." It is well known that lime unites with carbonic acid and thus soon returns to its primitive condition of carbonate of lime or lime stone; but that it freely imparts the carbonic acid for the nourishment of plants, is an assertion which admits of a doubt. The lime stone will yield up its carbonic acid when submitted to the action of a stronger acid, or when heated to a high temperature, as in lime burning.

Lime stone is soluble in water, which is impregnated with carbonic acid, but it remains lime-stone and does not part with any carbonic acid. The excess of acid in the water is not an effect, but the cause of the solution.

When carbonic acid has united with lime, water cannot dissolve it out. Farmers are deeply interested, and attention being eagerly turned to the subject of the operation of lime as a manure, every explanation is seized with avidity. It is better that experience in its use and effects should be our guide, however imperfect, than any false theory of its operation, which can only lead to erroneous practice. Respectfully,

ELLWOOD HARVEY.

Chadd's Ford, Pa., Feb. 17, 1847.

For the Farmers' Cabinet.

Cultivation of Cranberries on Upland Soil.

THE attention of the public having been called to the culture of this delicious fruit, and Mr. Gardner, of Massachusetts, having produced three hundred and twenty bushels to the acre, on upland soil; I proceed to give his mode of cultivation as follows: "I selected a piece of cold wet land that will keep moist through the year—remove the

top soil to the depth of two inches; this prevents all grass or weeds from growing, and the plants will require no cultivation after they are set out. After the top was removed, I harrowed the ground smooth and marked it out in drills, eighteen inches apart, and set in the plants four inches apart. Some I set out on sods fourteen inches square, placed in holes a little below the surface. They all flourished far beyond my expectation: the first year they put forth runners three feet long, and every vine was loaded with fruit. The plants can be set out from September to December, and from April to the last of June."

Yours, &c. B. G. BOSWELL.

For the Farmers' Cabinet.
Hydraulic Ram.

In the last number of the *Cabinet* is an article recommending the application of a syphon to the supply pipe of a hydraulic ram. It seems to me that the principles upon which such a modification depends, should be carefully examined, before any person incurs unnecessary expense in introducing it.

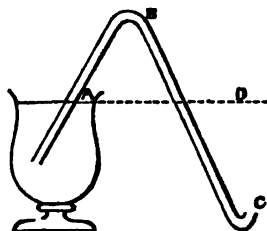
It is a settled principle in hydraulics, that the total efficacy of a water power is found by multiplying the quantity of water by the height of the fall. Now as no mechanical contrivance can increase power, it is evident that were there no loss from friction and imperfect application of the water to machinery, the whole effect would be of easy calculation. The only difference then, that results from the use of different kinds of machinery, arises from the more or less perfect manner in which they use the power of the water. Now I think it will be apparent from the following remarks, that the use of a syphon is a less perfect mode than a straight pipe, and of course should be discouraged. If it is a fact that a larger quantity of water was raised by H. H. Strawbridge when he used his bent pipe, it would no doubt be interesting to the readers of the *Cabinet* to have the discrepancies between practice and theory explained.

First—We shall endeavour to explain the principle on which the syphon acts; for it is plain the whole argument must be based on this. H. H. S. appears to suppose that the fall of water is increased by the employment of the syphon. He says, "The fall of water requisite to work it being very small, I continued to increase it by the improvement I am about to describe." And again, "In this manner, by employing a syphon instead of a straight pipe, conducting from the pond or spring to the ram, a fall of six or twelve inches, which would not afford sufficient

power to work the ram, may be increased in power so as to equal that of a natural fall of many feet." Again,—"The power will of course be in proportion to the perpendicular height of the syphon; which cannot, however, be made to act if its elevation exceed 32 feet. This will give a power of 14 lbs. to the square inch, if merely the dead pressure be taken into consideration, but a much greater power, if the momentum of the descending column of water be calculated."

I now propose to show that the theory developed in these remarks is not sound.

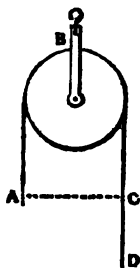
The whole moving power in the syphon depends upon the difference in the perpendicular height of the columns of water in the two legs. Let A B C be a syphon, the longer



leg being B C. The whole moving force, and of course the only force applicable to working machinery of any kind, is the column D C, A and D being on a level. The water in B D can exercise no effect on the machine—except from its momentum; a point to be considered hereafter—its whole force being expended in supporting the water in A B. This must be evident; for were the leg B C to terminate at D and be slightly turned up as at C, to prevent the water from dripping out, no water would be discharged by the syphon. This being the case, and the law, that every effect is in proportion to the force which produces it, being of universal application; the addition of the column D C cannot cause an action by the machine equal to that which would be produced by the whole water in B C.

I am aware that there is a popular notion, that the water in the shorter leg being raised by atmospheric pressure, the whole of that in the longer may be applied to the moving of machinery. This, however, is fallacious. It is true that the water is forced up by atmospheric pressure, and it is also true that the water in the longer leg is supported by atmospheric pressure to precisely the same amount. The two columns being thus kept in contact by the pressure of the air acting at the two extremities of the tube, the action of the water is, so far as its dead pressure is concerned, perfectly analogous to a

rope hanging over a pulley; and certainly H. H. S. will not contend that it requires a force at A equal to the weight of the rope B C D, to prevent the rope running over, but only a power equal to the weight of C D, A and C being on a level.



But the whole matter may be reduced to experiment,—if we place the finger on the end of a syphon, in order to stop it, it will be found that it is by no means necessary to apply a force equal to the weight of a column of 32 feet in perpendicular height. It is sufficient to apply a power equivalent to the weight of a column whose length is the difference of the perpendicular heights of the two legs.

Inasmuch then as no contrivance can increase the power of the fall, it might be supposed that the ram would work equally well, whether placed close to the spring, or at some distance from it: this however would be a hasty conclusion. A certain time, depending on the structure and size of the ram, is requisite for the perfect opening and closing of the valves; and to give that time, a long pipe is necessary. Could the valves be opened and closed instantaneously, it would be best for the pipe to be as short as possible; the diminished discharge from each stroke being more than counterbalanced by their increased number. But time is necessary; and as we must get it, it is best of course to do so in the most economical manner possible.

A certain velocity is necessary to close the escape valve. Now the whole moving force being that due to the perpendicular fall, the time necessary to acquire that velocity will depend on the length of the supply pipe, and be exactly proportional to that length; no allowance being made for friction. Consequently with a supply pipe 40 feet long, the strokes will occur about half as often, as when the pipe is 20 feet. But the column being twice as heavy, each stroke will discharge twice as much water; it being assumed that, in both cases, the valves have full time to act. The momentum and the number of strokes depending

upon the length of the column; the height being supposed invariable, it will manifestly be best to use a straight pipe, because it is a well ascertained fact, that all curvatures diminish the discharge. If then the above principles be correct, the effect of H. H. S.'s machine would be increased by straightening his pipe and removing his ram to a distance from the spring equal to the length of his syphon.

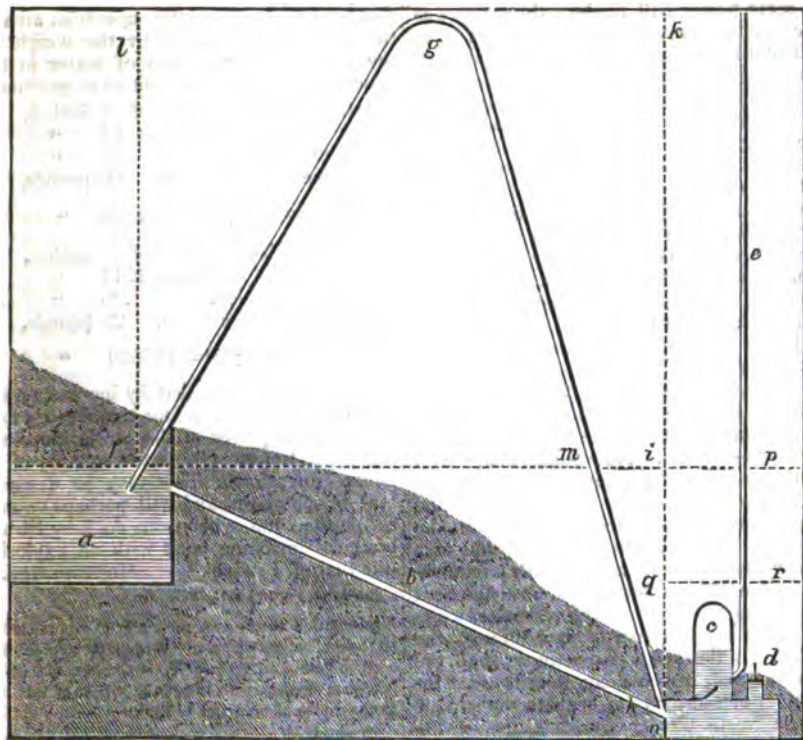
It may be asked if it will make no difference whether the strokes take place at long or short intervals. It undoubtedly does.

The escape valve is closed by the water pressing against its lower surface. This action depends solely on the velocity of the discharge. It can therefore make no difference in the time occupied by a stroke, whether this velocity is suddenly or more slowly acquired. Suppose we have two precisely similar machines worked by springs having the same fall, the supply pipes being respectively 40 and 60 feet long. Now in these cases the strokes will be made in the same time, while the intervals between them will in one case be twice as great as in the other. If then an interval of two seconds be required by the ram supplied by the shorter pipe, it will evidently require four seconds to acquire the necessary velocity in the other; therefore, if half a second is occupied in closing and again opening the valve, it is evident in one case the strokes will be made every two and a half seconds, and in the other every four and a half seconds; the number of strokes are therefore as nine to five, and consequently the machine with the longer pipe will discharge the most. No account has been made of the effect of friction, which, if the pipe is extended much will so far diminish the discharge, as greatly to lessen the efficacy of the machine. The most economical length will depend upon the size of the supply pipe. From 40 to 50 feet is thought to be the best length for pipes of two inches bore.

There is one other remark in the communication of H. H. S., which, as it may possibly lead to unnecessary expense in procuring large air vessels, requires a passing remark. He says, "The forcing power of the air vessel, like the power of a Bramah press, will increase in proportion to the enlargement of its horizontal area." He certainly could not have considered that it is only the pressure per square inch, that is to be taken into consideration; a pressure of 2000 pounds on a surface of 144 square inches, would produce no greater discharge than one of 500 lbs. on a surface of 36 square inches.

S. ALSON.

Wilmington, Del., Third mo. 1st, 1847.



For the Farmers' Cabinet.

Hydraulic Ram.

THE statements of H. H. Strawbridge in the last Cabinet relative to the working of this machine, are so completely at variance with our old notions of things, that if they should be confirmed by future experiments, they will entirely "confound all our philosophy." It will afford occasion for inculcating some philosophical truths, to inquire what this new philosophy is?

"By employing a syphon instead of a straight pipe, a fall of six or twelve inches may be increased in power so as to equal that of a natural fall of many feet. The power will, of course, be in proportion to the perpendicular height of the syphon—not exceeding 32 feet. This will give a power of 14 pounds to the square inch, if merely the dead pressure be taken into consideration—but a much greater power if the momentum of the descending column of water be calculated."—says H. H. S.

Let *a* represent the spring or reservoir, *b* the induction or feeding pipe, *c* the air cham-

ber of the ram, *d* the escape valve, *e* the eduction or raising pipe, *f g h* a syphon.

Now the dead pressure or effective weight of the water in the tube *b* is equal to a similar perpendicular column of the height *k i*.

The power of the syphon is known to be equal to the difference between the perpendicular heights of the ascending and descending columns—that is the difference between *k k* and *f l*, which is also equal to *k i*. Therefore the effective powers of the straight tube and of the syphon are precisely the same.

The motive power of the water is derived from the force of gravity acting upon it. In the syphon the columns *f g* and *g m* being of the same altitude and weight, exactly equipoise each other, and remain at rest; but when the additional column *h m* is appended to *g m*, it preponderates the opposing column *f g*, and the whole is put in motion.

Whatever may be the motive power employed, the motion produced will be in an inverse ratio to the quantity of matter moved. Now if the quantity of water in the straight tube be equal to 10, and that in

the syphon equal to 30, it will follow that the same power will produce three times as much motion or velocity in the short tube, as it will in the long one. If the motion in b is equal to 9, that in $f g h$ will be only 3. Now the momentum is found by multiplying the weight by the velocity or motion—therefore $10 \times 9 = 90$, the momentum of the water in b : $30 \times 3 = 90$, the momentum of the water in $f g h$. Hence the acting force of the straight tube and the syphon are exactly equal.

"A fall of one foot or more may be obtained in any situation by partly burying the ram, so as to place it lower than the feeding reservoir, and the escape of the waste water will not impede the working of the valves; for I have made it work at the depth of two feet under water."

We have already seen that the motive power of the ram is equal to a perpendicular column of water of the height of the fall employed—or h i. Now suppose the well $i n o p$ to be dug on a level plain $f p$, and the ram placed in it; it is evident that the waste water would accumulate upon the machine. The effective power would now be a variable quantity, constantly diminishing as the water accumulates, until the well is filled to the level of the reservoir, when the water would cease to flow through the pipe b . If the fall h i was more than the ram required, it would continue to work for a longer or shorter time beneath the surface of the waste water. For instance, if the fall $q i$ was sufficient to move the valves, it would continue to operate until the water rose to $q r$, and then it must stop. It is therefore entirely fallacious to talk of *burying* the ram and then *drowning* him, unless there is more than the requisite fall at command—and then it would be unnecessary.

"The forcing power of the air vessel will increase in proportion to the enlargement of its horizontal area."

It is the momentum with which the water enters the air chamber, which compresses the air, and imparts to it its spring, or forcing power. The column of water in the eduction pipe, is a counterpoise to this momentum, and affords a correct barometrical measurement of its force. This force cannot depend in any degree upon either the form or size of the chamber—there can be no relation whatever between them.

By increasing the superficial area of the chamber, we add greatly to the expansive force or bursting power of the air and water contained in it—for it is known that fluids press equally in all directions, and consequently, that equal areas of the vessel will sustain equal degrees of pressure. The bursting power of the chamber is represent-

ed by the quotient of the area of the eduction pipe, divided into the superficial area of the chamber, multiplied by the weight of the perpendicular column of water in the eduction pipe. I will make two suppositions:

1st. A cubic chamber of 3 inches,
area, = 54 "
area of pipe, .25 "
weight of column, 20 pounds,
 $\frac{54}{.25} = 216 \times 20 = 4320$ "

2nd. A cubic chamber of 18 inches,
area, = 1944 "
area of pipe, .25 "
weight of column, 20 pounds,
 $\frac{1944}{.25} = 7776 \times 20 = 155520$ "

Hence it appears, that by increasing the linear dimensions of the air chamber six fold, the bursting power of the air is increased thirty six times. Or, as the squares of its linear dimensions. This may be a useful hint to operatives, and will perhaps explain better than the syphon can do, why Strawbridge's "machine burst with an explosion like that of a swivel." MONTGOMERY.

Sylvania, Second mo., 1847.

In addition to the two preceding Communications on the syphon, another was subsequently received from a much valued friend near West Chester, Pa. It did not seem necessary to insert the whole of this last. In the course of his letter he says:—

"There is no occasion for any one to hesitate about introducing the Ram for want of fall, for almost any farm will yield fall enough for the purpose by a little digging, and three feet, with a good head will be ample for slight elevations, say to thirty feet, or even more. I placed one on my farm last spring, which has been in operation since that time; the fall for the working of which was gained by sinking the ram three feet or more below the surface, and carrying the waste water away by means of a drain. The length of trenches dug to attain eight feet fall in this way, was something more than 260 feet. With the fall thus obtained, my supply of water is driven through about 1400 feet of lead pipe to an elevation of 115 feet, at the rate of fourteen barrels per day. The cost of thus introducing water to my barn, has been \$225, as near as may be; the interest on which is \$13.50, a cheap method of insuring a constantly flowing stream of water, to which your cattle can resort at pleasure.

"For trifling elevations any of the many *rems* now offered to the public would be found efficacious, but when considerable height and great distance are combined, it would be advisable to consult some one who is scientifically acquainted with the laws of the motions of fluids, lest the too hasty adoption of false principles should end, as it surely will, in disappointment."

In the first column of page 218 of last number of the Cabinet, and the 35th line from the top, an error occurred; 80 should be 30.—Ed.

Cranberries.

THIS communication is sent for the purpose of calling more efficient attention to the cultivation of cranberries. While there is so much inquiry as to the best method of reclaiming peat meadows, it seems strange there should be so little in regard to making them productive, with the least possible alteration from their present condition. It is curious to see how far nature may be led by ingenuity from the original form of her servitude; but like other good servants, she will be more useful, when she has partly her own way, and her character studied while imposing duties.

The cranberry is a prominent natural product of these meadows; of its superior value as compared with any of the other fruits used for pastries and sauces, there is no question, while its beauty of color and fine flavor obtain this preference. Its keeping qualities allow of its being shipped to any part of the world. In England, millions of bushels of gooseberries are grown at greater cost for the same purposes, and are of less value in all the respects above mentioned, especially in the all-important one of keeping.

The market for the cranberry may be stated as co-extensive with commercial intercourse; and to preclude diminution of price from over supply, even if every acre of peat land in New England should be devoted to its production.

The indigenous crop of this fruit affords much encouragement, and many instances show it to be the best use of these meadows. The greatest value of natural production has always been in the indications afforded by it to the cultivator. The writer has seen a rod square of cranberry vines, in a peat meadow belonging to Frederic Tuder, Esq., in West Cambridge, from which were picked upwards of three and a half bushels of the fruit, and it is supposed if every cranberry had been gathered, there would have been four bushels, or 640 bushels to the acre. What is produced by accident may with more certainty be produced by design. With this view, the gentleman above named, has planted upwards of five acres; and from his perseverance and sagacity in all his undertakings, there is no doubt that this enterprise will produce valuable results.

Some gentlemen have placed in the hands of the Society of Middlesex Husbandmen and Manufacturers, forty dollars, to be added to their premium of ten dollars "for the best product of cranberries in 1847, obtained through artificial cultivation from four rods square of peat meadow, to be accompanied

by a full and clear statement of the methods adopted."—*Boston Cultivator.*

Agricultural Discussion, Albany, N. Y.

MR. JOHNSON, Secretary of the State Agricultural Society, said he would at this time make some remarks on the Agriculture of England. It was a subject, to an American, replete with the greatest interest, especially if he views it for the first time—it being so entirely different from what he sees in his own country. It is essentially an old country; and you look in vain for the trees and stones and stumps so common on our farms, and in our country generally. Every thing in England is under the best cultivation; and the land is in the best condition for the farmer. The stones are all removed from the land, if we can suppose they ever were there. There is nothing to interfere with the prosecution of his plans. The manner in which the work is done differs essentially from the way of this country. The utmost care and precision, and neatness in every respect, are in their judgment the very best way to produce a great crop; a kind Providence has given them the land, and the very utmost preparation for the furtherance of the crop, which they derive from it, is alike their duty and their interest. English farming seems to have attained perfection, and yet they say it is but just begun—and they calculate on large advances; but how they are to make it, is not easy to perceive.

In the spring of the year, there will be seen on the farm a large collection of females, some of mature age, and some of tender years—frequently twenty, or thirty, or forty, in a field—following some old men with *scuffle hoes*, cleaning out the rows of wheat. Every where is witnessed the nicest care in cultivation, such as would be given here to the finest garden bed; and this is general—both where the drill is used, and where the seed is sown broadcast—the same attention to extract every thing calculated in any degree to impede the beautiful culture of the grain. He had found this very general, and in many fields which he saw, there was not to be seen a single weed. And when they are asked the reason of this extreme care and nicety, the answer is very readily given.

They pay so much for their lands, their manure costs so much, that it will be readily seen that there is a necessity for the cultivation of every part of their land. None of it is to be lost, if they would have any remuneration whatever for their labor; and we may well take into consideration, if the same perfect and systematic method is not the very best way for a good farmer in all

places. The wages of these females thus employed are, of course, far lower than wages with us, and it cannot be expected that we should adopt such practices with the usual price of our grain crop.

But, in the process of ploughing, there is no reason why we should not do as well as in England. Their furrows are from eight to ten inches wide—seldom exceeding ten; very straight—made with the greatest nicety and precision—the sile is of the same thickness all the way through, so that the sod does not decompose quicker in one place than the other, and the soil becomes equally pulverized; nor does the grain start unequally, nor the farmer lose as with us, a third of his crop by its unequal growth. They plough with horses, usually from three to as many as six, in single file, with one or two drivers—sometimes very young lads at the plough. The use of horses, as with us, is evidently becoming more frequent. This work is done with perfect neatness and care; often the result of the labour and experience of years on the part of the ploughman. In England, each individual does one kind of work, so that he understands it perfectly. There they have no such character as a man of all work. The ploughman attends to that work alone. He goes to his work early in the morning and breaks off about two, and then has the charge of his team. If any sods remain undecomposed, these females again appear with their baskets and gather them into heaps, when they are consumed, and the ashes scattered about the land. The roller and the crusher, the latter of which is very heavy, are freely used. The best cultivators distribute the seed by drills, and seed is sowed by this, and the grain deposited and covered more uniformly—and the broad cast system seems on the retrograde.

There are no fences in England—the scarcity of timber is a sufficient reason—the hedges are very neat, and are attractive in their appearance to the stranger. Some farmers there are who, like some in our own country, let things go to loose ends, but in the midst of so beautiful and finely cultivated lands, those exceptions make but a poor appearance.

He had visited, with great satisfaction, the dairy districts of England, especially those of Cheshire and Worcestershire, our strongest competitors. One great principle pervaded them all. The first and second and last thing in the English dairy was *neatness*. Every thing about them was neat, and nothing unsavory was allowed to be there. This extended to the care and keeping of the cattle, and he had seen many stables, where the cattle were kept with the utmost nicety.

This was a principle with the English in the manufacture of butter and cheese, and it would be in vain for our farmers to seek there a market for these commodities, unless these excellent qualifications had a rigid compliance.

The salt they use appears to give them an advantage over us. It is chiefly the Liverpool and of the Ashton brand. This appears absolutely necessary for the preservation and preparation of their fine butter. Our farmers, many of them, are following this example, and are incurring the expense of procuring foreign salt, rather than to buy our own at Salina.

The great objection there to our butter was that it was salted too much. The English had seen but little of our good butter. Most had reached their country under the denomination of grease. Even with us, the proportion of salt is often so great, that with the butter we take in our mouths, comes a lump of undissolved salt. Such carelessness must forever destroy our hopes of a market in England.

The condition of their cattle is most admirable. They are fatted to perfection. They vary from eighteen months to three years; few being sold in market over three years of age. You may see often 5000 fat cattle at once in the market at London, and out of the whole, there are every week immense numbers equal to the splendid specimens exhibited at our shows, such as would receive with us the first premium, and this not of one breed alone, but of several. The black cattle, Galloways and West Highlanders, may be said to stand at the head of the market, and command the highest price. The Herefords are next to the Scotch cattle, and are very fine animals. The Short Horns and Devons are also very choice and superior animals.

There were three descriptions of the black cattle, which I saw. The Galloway, without horns, the West Highland, and the Runts, equal to either, though of a much smaller size. Similar cattle are common in Anglesea in Wales.

The sheep are enclosed in hurdles on the ground, and fed on turnips, vetches, clover, early grass, and whenever one part of a field is finished they are taken to the other, which, after they leave it, is plowed up and used for grain. They go to market by railway, and are in the finest condition. 80,000 of them arrive in London weekly. Go and look at the immense number, and you would suppose there was enough to feed all England. On Monday morning early, you will find them all paraded for sale, and when you go at twelve o'clock you will find them all gone;

not one left, and the next week the same scene will be presented. Of the different breeds the Southdown may be considered among the best. There is a little Welsh sheep which is very popular. He had noticed them from the deck of the steamer in passing the coast of Wales, and they were as small apparently as lambs; and though the hills seemed almost bare of vegetation, yet small patches of pasture might be discerned, and by the aid of the telescope, paths by which the sheep finds its way from near the waves of the ocean to the top. These make the finest mutton in England. Then there are the Leicester and the Cotswold, and another black and white faced variety from Scotland, with long wool, which is a very superior sheep.

The condition of their laboring population is a very peculiar one, having striking features. He went among the laborers on a great many farms with perfect freedom. The name of America was every where a passport; and though it was then in the midst of the Oregon excitement, yet he did not hear, from high or low, rich or poor, any other feeling expressed towards America but the kindest. They all seemed to say, they would rather give all the disputed land up than have one day of war. Nothing but national pride would have ever led to difficulty. His only difficulty had been to get from place to place, such was the hospitality shown—such the anxiety manifested to hear all about America, that every where he received an English welcome.

All of them work, from the smallest child to the man of great age. They must all do so to live; for, except on some favored localities, where the landlords give liberal recompense, the wages of the best of them will not admit of their laying up more than about eighteen pence or two shillings sterling per week, when all were able to labor.

Their food differs from ours chiefly in this—that the laboring population eat very little meat. Their breakfast is of coffee, bread, oatmeal, &c. In Ireland they are very fond of potatoes; but he very seldom saw them use meat—certainly not on week-days—perhaps on the Sabbath they would have a little.

And yet they are almost universally healthy. He freely confessed that he had seen no finer looking set of men than were the English—and he credited the assertion that perhaps the finest looking race of men in the world were the English nobility. Their constant exercise out of doors contributed to make them remarkably healthy.

He visited Ireland—which was a remarkably fertile country—more so even than England; and if agriculture was carried there to the same perfection which it has

attained in England, Ireland could support itself from its own soil with perfect ease. He was there in August, when the potatoe plague had just made its appearance. In July, when he had before seen the fields, every thing looked well, and every heart was filled with joy and gladness at the prospect. In three or four weeks the blight began, and there was exceeding distress in every part of the country.

No one can conceive how much the potatoe is planted. To every small cabin there is a potatoe patch. It appears to be almost their only subsistence. They raise a pig, sometimes some poultry, eggs, and now and then a cow; and out of all this they have to pay the landlord. So that their chief dependence is on the potatoe.

In travelling from Dublin through Drogheda to Belfast, he had met many very fine farms, some as good as could be found in the entire kingdom of Great Britain—all in fine order and looking very beautifully.

The tenantry are in a very low condition. In this country we have no human beings who live as many of them do. The shanties on our canals, compared to them, are splendid edifices! An Irish hut is made of mud. Sometimes there is a hole in the top for the escape of the smoke, but in many instances the only ventilator is the door. Pig, cow and hens all live in the same domicile with the children. They sleep all together, and he had never seen, in examining these abodes, *any thing like a bed*. And yet they all appeared happy and contented. All made him free of their house, and all received him kindly. There were evidently warm hearts found there.—*Ev. Journal*.

From the American Farmer.

The Potatoe Disease.

It may be concluded by many of our readers, that we devote more than a fair proportion of room to the consideration of this subject. Our excuse is in its vast importance. If we advert to the fact, that not only are districts in our own country seriously affected by this visitation, but that also kingdoms are convulsed with famine and fearful forebodings of the future, we cannot fail to perceive in a moment the reasonableness of giving to it a large share of attention. We have no theory of our own. We believe it is among the inscrutable dispensations of Divine Providence. If science or experiment or any thing else can discover a remedy, it will be well. We feel bound to throw before our readers, much of what seems calculated to give information in the matter.—*En*.

To Robert Sinclair, Jr. Esq., Baltimore.

December 20th, 1848.

MY DEAR SIR,—Your very kind letter reached me in due course of mail, but really my time has been of late so occupied by sun-

dry claims, (wherewith it was wholly absorbed,) that between *law, farm, and private affairs*, I have hardly had the time to kiss the little girl, box the boys, and say a gentle word to the "*better half*" of my humble self. Christmas is coming and so too I trust is a little leisure for me. Therefore, here the fourth day from that best of days in the year, I find a moment to answer your letter. I wish that my ability and experience allowed me to answer it as becomes the subject matter of yours to me. "*The Potatoe Disease*," is a prolific source to exercise the mind upon—it has engaged the ablest pens in the world—it has fired the imagination of the poets, and called out the deepest philosophers in the most learned and abstruse defences of favorite theories. And it has at the same time called out the honest thoughts of the truly practical and intelligent among our honest and *intellectual Farmers*. Hence, I have never written a line or a word on the subject, and should not now, but that courtesy required me to answer your letter, if for no other reason, to thank you for the excellent treatise you sent to the "*Farmer*," for December. Your views and suggestions are excellent, as every reader will admit, who reads and reflects upon your treatise I now refer to.

Not one of the many writers have found out the cause or even the probable cause of the *disease*, therefore no specific remedy has been discovered, and cannot be discovered till the cause is positively known.

I am too unlearned in the sciences to attempt an explanation of the large portion of natural phenomena coming under my daily observation; or to explain the connection that exists in many cases between cause and effect. To those more learned, I leave the truth after I have stated my views, based upon experiments and ascertained data. I give you my opinion, upon what it is founded, but the *why and wherefore* it is so, you must get some one far greater than I, to expound to you. The cause of the potatoe disease is from using *too much manure and planting too long a time the same sort or kinds*, without often enough resorting to the seed for newer and different kinds.

The kind of potatoe I have raised, by sowing the seed eight years ago, which I call "*Bowie-Seedling*," have now arrived at hardy perfection, and become nearly akin to the Mercer, from the seed of which it was raised. But it is becoming now for the *first* time, subject to the disease. For the first few years it was very imperfect, being of various forms, and of different color, and small, but free of disease, until this year. This year, slightly affected, but not near so

much so as other kinds on my own farm and on my neighbors. Like every other object in the vegetable, and indeed I might say also animal kingdom, it having reached a certain stage of perfection, can be carried no farther in improvement, and must deteriorate. It must be crossed, or aided by some change, or it will in a few years deteriorate into utter worthlessness. Breed animals in and in, and they will become good for nothing. It is true, that by skill, care and proper means, flowers and fruits, and vegetables, become, from useless, trifling eye-sores and unwholesome non-descripts, large, luscious, and beautiful; but there is a stopping point! the peach will never become as large as an eighty pound pumkin, and I venture to say, there never will be seen a grass-green horse. It has been said "thus far shalt thou go and no farther." While the Supreme Being has placed a limit to human means, I cannot believe that he has prepared an article of human subsistence, which is so necessary for the support of millions, and will permit it to become totally useless, and as some seem to fear, will in a short time eradicate it from the earth.

The potatoes I raised from the seed, are free from disease, in comparison with other kinds, but will become diseased I have no doubt in a few years. Quere—would not seed now from them, be productive of a potatoe free from rot?

Too free use of manure is hurtful. Animal and vegetable manures are particularly productive of weeds, worms, flies, and stimulate the vines to great and rapid growth, whereby, from all these causes combined, smut, mildew, and other diseases are generated. The first year the crop may be slightly affected—the next year it becomes more so—and thus members of the same diseased family are again planted to become still more impregnated with the distemper, by the same appliances which first caused it, and thus, fuel is added to the fire year after year, until they become so diseased, that the farmer is compelled to "change his seed."

It is a well known fact, that until a few years before the appearance of this potatoe rot, but little attention was paid to the raising and using of great quantities of manure. And those who first used manure extensively, used it upon their root crops; from seeing a great increase in these by its lavish use, they were led to use it in quantity upon other crops. Again, the potatoe disease commenced in Europe first, where heavy manuring of them with unrotted manure, had been long practised, and so in this country. It began first in the north, with those farmers who had first caught the flame of improvement

in agriculture, by means of manure, which the immortal Buel had lit up in a land where the people were more easily persuaded to look well to their own interests, than our people are, who had been already for years enlightened by the "American Farmer," though they but seldom practised its precepts. Of late years, our people have manured heavily, and lo! the rot affects our potatoes, for we bought "Mercers" from the north, and practised northern cultivation with them.

Another fact—all scientific writers propose the use of plaster, lime, salt and other mineral manures; but there they stop—it not occurring to them that unfermented, or other vegetable and animal manures are hurtful. They say, that where plaster, salt, or lime, &c. have been used, the potatoes are less, and in some cases not at all diseased. They then account for it by going into the effects of these substances upon the air, the dews and a thousand other chimerical causes, but all conclude at last that nothing can be arrived at with certainty. Now for my other facts;—I had last year several rows of potatoes, (Mercer) manured with tobacco stalks alone; there was hardly one diseased potatoe,—the rest were alongside manured with well rotted stable and hog pen manure, many of the potatoes were rotten, others unsound. Now it is well known that there is a great deal of nitre in the tobacco stalk, and the vegetable parts are so woody, that they did not fully decay while the potatoe was maturing, consequently the only benefit the potatoe derived was from the nitre in the stalk.

I sold to a neighbour some from my seed-heap. He planted them in April, upon a dry, sandy or gravelly soil, that was poor, but no manure but a light sprinkle of ashes unslacked, over them. He had splendid, sound potatoes, and they were from time of planting, in eight weeks, as large as hen eggs, with, as he says, not one diseased.

In 1845 I raised some of the soundest and finest potatoes in my neighbourhood. My neighbours bought this spring most of them for seed, although some were touched by the rot, I made about 160 bushels, and I lost of them 8 or 10 bushels. Half of these potatoes were manured in the drill with stable manure, and other drills with tobacco stalks, while some had nothing but a good sprinkle of plaster. Where the plaster was, none were rotted, were the fewest but largest; those least injured by rot were where the tobacco stalks were; and where a heavy coat of manure was placed, there was a large crop, but much disease.

One of our most successful potatoe growers, and excellent managers, Mr. B. D. M.

never had the rot in his potatoes, until he had used the same seed, or his own kind, for many years, and had resorted to heavy manuring, with long manure, and other barn yard and stable manure. Then he, as was formerly his practice, selected his poor knolls and barren spots for his potatoes, and used no other manure than tobacco stalks; he made great crops, and the most splendid, mealy, delicious potatoes,—outselling every body; and he made large crops. One year from seven pecks planting, he gathered 170 bushels of fine potatoes. This is a strong fact.

The soundest and best potatoes raised in our county, are made upon our poorest lands. In what we call "Chinquelin Hundred," we hear but little or no talk of "the rot;" but while they boast not of large crops per acre, they always can give you fine, large, sound potatoes to eat. And they do not use much manure. This is another strong circumstance.

An old writer, as far back as 1785, when no rot was heard of, says, "to make good potatoes, take old worn out stubble land and plow it up in the fall, in two furrows back to back, so as to leave drains about two feet apart, by this means it becomes thoroughly dry." * * * "When you plant, put a piece of dung as big as your fist upon each potatoe set, and let them be the length of a man's foot apart in the drill." This you see is not heavy manuring.

From all these facts and circumstances, I have come to the following conclusions, without, I candidly confess, being able to assign a scientific reason why it is so, and why it should be so; but I know it is so, and seeing and feeling make us have faith, although we may not be able to explain the mysteries of that we feel to be true.

1st. Conclusion—We do not often enough, with sufficient care, propagate new species of potatoes from the seed.

2ndly. We use too extensively vegetable and animal manure upon our potatoe crop, especially upon our rich lands.

3rdly. We should be careful to select dry ground for this crop. Not high, hilly land, but dry soil, one which retains not water long, but is deep and dry, because the water can easily penetrate it below the roots, and pass off without injury to them.

If I am right in my conclusion, the remedy for the disease I would suggest is, to wit:

1st. Let every farmer select a few fine potatoes free of rot, and plant them in only thin soil, without any manure, and save the seed; from this, let him propagate a new variety for himself, saving and planting from the product of this seed the handsomest and best specimens annually, for four or five

years. If at that time his production should not be valuable, it will not have been without profit to him, for his example will have urged others to a like course, and from the many efforts, he will no doubt derive great benefit, as some one or other will have succeeded in procuring a superior kind of potatoe.

2nd. The land intended for potatoes next year, to be broken up this winter and sub-soiled. The poorest land to be selected, and given, say not more than twenty loads of manure per acre, spread over and ploughed in this winter. If the land be of good quality, no manure at all. Next spring when you plant potatoes, be sure to put no manure, except this mixture, sowed over the potatoe sets, so as to make the bottom of the trench look white. Mixture—one bushel of lime, one of salt, one of unleached ashes, half a bushel of saltpetre, half a bushel of soot, or charcoal. Let them have no other manure, except when they come up above ground, give them a good dressing of plaster, sowed just over the top of the drill. The potatoes used should be sound, and small ones selected, as they are commonly most freed from disease.

I do not contend that by this course more potatoes can be raised, but I believe that by such a course, the rot will be cured, and many new and superior kinds of this excellent vegetable be the result.

These suggestions and deductions of my own, drawn from facts coming under my own observation, I offer with great diffidence, as they are at variance with the most learned of the writers upon this important subject. I should never have advanced them, perhaps in public, had I not been called upon by your letter, for my views in relation to the matter. I now give them to you for what they are worth—and have the pleasure to be

Your friend,

WALTER W. W. BOWIE.

For the Farmers' Cabinet.

Extension of Colman's Tour.

I AM a subscriber to Colman's Agricultural Report, and have been much interested in the Numbers as they have appeared. I know of few books of travels through Great Britain, which contain so much interesting and valuable information; and as the work draws towards a conclusion, I feel great regret, that while much remains untold about the agriculture of our Father-land—all the interesting and important details concerning the Continent of Europe, will have to be crowded into two Numbers. If the subscribers to the Tour, think with myself on the subject, there would be a general expression of regret on this account, and an effort made

to induce the author to extend his Report to three volumes. The present might then be occupied with the conclusion of the Report on England, and the third volume devoted to the Agriculture of the Continent. The price of the additional volumes, I am sure, would be cheerfully paid by a majority of the subscribers, who would thus receive, instead of a compendium of information, so brief as to be of little practical value, a full and detailed report, perhaps more interesting, because more new to us, of all that is most worth knowing, respecting some of the richest and best cultivated countries on the globe.

D. B. S.

We freely endorse the suggestion made above, and would be much gratified, if it could be so responded to by the subscribers to the Tour, as to determine our Tourist to give more time on the Continent, and more detailed information in relation to its Agriculture, than we fear he can give in the two remaining Numbers. We know comparatively but little of that agriculture, yet we are aware that there is much which it is important we should know;—and who can more thoroughly or more pleasantly inform us, than our good friend Colman?—Ed.

Planting the Isabella Grape Vine.

THE most favorable season for planting the Isabella grape-vine in the United States, is when the red-flowered maple is in bloom, which usually occurs in Georgia, from the 20th to the last of February, and five or six weeks later near Philadelphia and New York. In selecting the cuttings for a vineyard, they should be of one variety, and taken from the most fruitful part of the vine. Let us not content ourselves with single clusters, but those which are the most prolific. The greatest proportion of fruit grows from the buds on the last year's shoots next to the old wood, with the exception of the nearest eye, the top buds being unfruitful and seldom bearing at all. Some prefer to plant cuttings containing a considerable portion of the old wood; but, as it is not always prudent nor economical to mutilate a favorite vine too much, it is best to select fruitful cuttings of the last year's growth, with the wood well ripened. They should be of a moderate size, short-jointed, and containing from six to eight eyes or buds in each. They should be cut off transversely from the vine, with a sharp knife, close to the old wood, and not less than two inches of blank wood should be left for the protection of the terminal buds. The ends of the cuttings that are to remain above ground should be cut in an oblique direction, and the sloping side should be opposite the side containing the uppermost bud. If possible, they should be planted in calm weather, immediately after separation from

the parent vine, and be obtained from a soil, situation, and climate, similar to those in which they are intended to grow; but if any difference in these respects should unavoidably occur, it will be better to transplant from a poorer to a richer, and from a dryer to a moister soil, as also from a colder to a warmer climate. But should it be necessary to convey the cuttings from a distance, their lower ends should be immersed in a composition of fine earth, well mixed with linseed or other oil, of about the consistence of tar, as soon as they are cut off from the parent stock, at the same time, taking the precaution not to cut off the top ends till the moment they are to be used.

If the situation of the ground be on a plain, or in a valley, it should be dug two feet in depth, and on rising ground three; but on a hill-side, somewhat steeper, it should be turned up at least four feet, in order that the roots may penetrate beyond the reach of drought. If the cuttings are intended to be planted in drills or rows, let there be formed trenches three feet in length, two feet in depth, and the width of a spade, leaving intervals or baulks, a yard in length, between the trenches till the row is finished. Then, with good virgin soil, if it be at hand, if not let it be procured from the woods, and fill up the trenches therewith, mixing it at the same time with a due proportion of leaf mould or well rotted manure, or what is still better, the leaves and husks of vines, or grape seeds, in order to quicken and strengthen the growth of the plants. If a vineyard be the object which we have in view, let the rows or drills be trenched from five to ten feet asunder, according to the surface of the ground and the latitude of the place. If the situation be on a plain, in a high degree of latitude, the rows should be eight or ten feet apart; but if it be on the side of a very steep hill, or in a low degree of latitude, five feet will be sufficient; and on moderately inclined surfaces, or in higher latitudes six or eight feet apart will be all that is required. With regard to the direction of the rows, and the height to which the vines should be trained, they may run in a manner that will allow them to face any point of the horizon between south and east; and they may be supported on props, or trellises from six to ten feet in height, and even more, according to the vigor of the vines. But in cities, or about houses in the country, single vines may be trained on the sides and ends of buildings, along the sides of fences, or the trunks and branches of trees.

The ground having been prepared in the manner before described, the cuttings are next to be planted in the centres of the

trenches, so that each terminal bud will be even with the surface, and directed towards the south. Then the earth must be firmly pressed round each plant, and should it subsequently settle and leave more than one bud above ground, more earth or mould must be added to bury them up. As soon as the season becomes hot and dry, it will be necessary to protect the cuttings from the mid-day sun, by means of matting or other materials, which should be removed towards evening, and allow them to remain uncovered until the next morning, at about the time of the disappearance of the dew. Strict attention must now be observed in keeping the soil around the cuttings continually moist, and should not this be effected by natural means, it must be done by sprinkling rain or river water over them, or what is still better, soap-suds, or other stimulating fluids, especially prepared for the purpose, but not too strong. Soon after the cuttings begin to take root, which may be known by the swelling of the buds above the surface, young shoots will gradually protrude, and the plants will require but little attention during the remainder of the season, except an occasional hoeing to destroy the weeds, and to loosen the soil in order to admit the air and moisture, about the roots. Should the season prove dry, however, and the earth around the plants become parched, it will be necessary to irrigate them frequently with rain or river water, or with prepared liquids as suggested above. Early in autumn, rub off all the buds from each plant, except two, which are to be reserved for training the ensuing year.—*American Agriculturist*.

For the Farmers' Cabinet.

Composition for Peach Trees.

MR. EBBRON.—Some time since, on visiting Mr. Cushing of Watertown, near Boston, I was struck with the vigour and freshness of foliage of his peach trees—some of which before the use of the following receipt, he was about to cut down, thinking them good for nothing, viz:

One-third soot; one-third lime; one-third sulphur—mixed with water to the consistency of paint—to be laid on all the tree, before the buds appear.

I am not quite sure that the same will answer for plum and other fruit trees, but as the season is at hand for using it, I propose trying it. Respectfully, &c.

ROBERT RALSTON.

Mount Peace, March 10, 1847.

Would you avoid one great cause of ill humor in your neighbor? Keep your fences in good order.

Pennsylvania Farming

Recommended to be practiced in Maryland, naturally a better wheat country.

THE following letter was written by a plain, practical, working farmer, giving his views in plain terms—as one neighbour does to another—without any view of appearing in print. It need not be read with the less attention or profit on that account. We are sorry to understand that farming is not improving as generally as might be wished, in a region so blessed by nature with a rich and enduring soil and pure healthy atmosphere. If she does not keep pace with other sections, *query*, is it that her inhabitants despise book-knowledge; or is it, as some would contend, that they *read too much* of what is going on in the wide world of agriculture? On reading, we solicited the favour of being allowed to publish it. If there be in it nothing absolutely new, there is that which cannot well be too often repeated.—*Editor Farmers' Library.*

Utica, January 29th, 1847.

DEAR SIR,—In my last letter I mentioned something relative to the improvement of land in Lancaster county. I am fully convinced that, if a proper and judicious mode of improving land was introduced into *Fredrick county*, that in the course of six or eight years it would produce double what it does at this time. I consider that part of this county, where I am acquainted, a *much better wheat land than that of Lancaster county*, and under similar cultivation would bring *more wheat to the acre*. I would not dare to say that every farm would bring double. No doubt there are many good farmers here, as well as there; yet, I must say, I have been unfortunate in not meeting with many of that kind.

The most of all the farms within my knowledge, both in the limestone, as well as the red-lands, have become deteriorated and inert from the circumstance of a wrong mode of farming. A uniform mode of shallow ploughing, say five to seven inches deep—and that almost continually under the plough—with now and then a little starved crop of clover, and often the cattle turned on before it is six inches high: is it any wonder that these complaints are heard about bad crops? Nothing is a more convincing proof to me that plants derive a great deal of their nourishment from the air, seeing the crops, and considering the manner of cultivation. All land that has a good subsoil and what is generally called loam, is susceptible of improvement; and the only time it can be made available is late in the fall, after the

subsoil has become saturated with the fall rains, the wetter the better. There ought, by all means, to be a heavy coat of something to turn down. The ploughing must be a foot deep. Three inches or four of the subsoil which lies under seven inches, if well applied, would soon pay the State debt. What a pity to have so much hidden treasure unemployed and unproductive! When the genial rays of the sun spread a benign influence around in the spring season, causing man and beast and bird to rejoice, vegetation also rears its head to praise its Maker. This is the time also to prepare food, first for plants, and afterward for man and beast. Fermentation and decomposition then take place.

I would now say something about the deep ploughing: A considerable quantity of the five inches of subsoil turned up last fall, and frozen last winter, will now become available for the food of plants: amelioration takes place, it becomes friable and moulders down, becomes commingled with the top soil, undergoes now a state of fermentation—a kind of chemical process; and here is also going on, at the same time, the decomposition of the vegetable matter turned under in the fall. Here is a fine range for the corn roots to seek their supply—instead of six or seven inches, here are twelve. Here is a place to hide the roots from the sun, and here is a little cistern to hold water when there is a little to spare, to be drawn up by the rays of the sun when wanted.

As we have got through with the fresh start for improving the land—especially if it is possible, before planting the corn, to put a little manure on, as also fifty bushels of lime to the acre—this would be doing the thing right—we will now leave you with this advice: Work the corn well early; be sure to have no work to do in it after it becomes a foot high. The next crop to be put in is wheat, the next summer. Commence ploughing in May, harrow in June, plough in July, harrow in August, plough the third and last time the first week in September, and sow about the middle of the month. As soon as you have finished harrowing the wheat, sow to each acre eight quarts of timothy seed; then on with your roller, and roll all down smooth.

Then in the spring, to every six acres, one bushel of clover seed. The next summer there must be *no stock put on before the first of July*, and be sure none the fall before except a few hogs, if they do not root, after the wheat is off. The next summer mow the first crop about the first of July; and let the second crop stand, to be turned under as before, a foot deep. Now you have

got one once through. This plan may be altered and changed to suit circumstances, as may be required. If wished, it may be put in rye after the wheat; or it might remain three years in grass. The field might be put in wheat the same fall, by cutting off the corn, but the grass will never succeed so well, and therefore I would never advise that plan. It is *large crops of grass* that will improve the land cheaper and faster than any other mode of improvement.

As I have spun out a pretty long yarn already, I will soon come to a close, after saying something about the subsoil and deep ploughing. If the land is light and dry, and the subsoil land is open and porous, pervious to water, with a large proportion of sand, such land might be ploughed a foot deep in the spring for corn. The fall, however, is the proper time for all subsoil ploughing, and no other time will answer for land when the subsoil is of a hard, stiff clay. The frost is the only and proper agent to commence the work of deepening the soil.

I really feel as if the boy was making an attempt to instruct the master. Well, if it should be so, I know you will attribute my saying what I have said to a pure intention.

To conclude the whole matter, a deep rich soil is indispensable, if you want good crops. Now, the great point is, let every farmer go to work. Let him not only work, but *read and study*; and the man that shall find out the most judicious plan of deepening and improving the soil, let him have a great monument raised to his memory. I am sure he would be more deserving *than if he had killed a thousand Mexicans*.

Respectfully,

WM. TODD.

White and Brown Bread.

SEVERAL years ago, we threw out the surmise that the separation of the white from the brown parts of wheat grain, was likely to be baneful to health. We proceeded upon theoretical grounds, believing that Providence must have contemplated our using the entire grain, and not a portion only; selected by means of a nicely arranged machinery. It struck us forcibly that to go on for a long course of years, thus using a kind of food different from what nature designed, could not fail to be attended with bad consequences. We have since learned that our views have some recognized support in science. The following paragraph from a recent pamphlet will at once serve to keep the subject alive in the minds of our readers, and explain the actual grounds on which

the separation of flour is detrimental. "The general belief," says the writer, "is that bread made with the finest flour is the best, and that whiteness is the proof of its quality; but both these opinions are popular errors. The whiteness may be, and generally is communicated by alum, to the injury of the consumer, and it is known by men of science that the bread of unrefined flour will sustain life, while that made with the refined will not. Keep a man on brown bread and water, and he will live and enjoy good health; give him white bread and water only, and he will sicken and die. The meal of which the first is made contains all the ingredients necessary to the composition of nourishment to the various structures composing our bodies. Some of these ingredients are removed by the miller in his efforts to please the public; so that fine flour, instead of being better than meal, is the least nourishing; and to make the case worse, it is also the most difficult of digestion. The loss is, therefore, in all respects a waste; and it seems desirable that the admirers of white bread, but especially the poor, should be acquainted with these truths, and brought to inquire whether they do not purchase at too dear a rate, the privilege of indulging in the use of it. The unwise preference given so universally to white bread, leads to the pernicious practice of mixing alum with the flour, and this again to all sorts of adulterations and impositions; for it enabled bakers, who were so disposed, by adding more and more alum, to make bread made from the flour of an inferior grain look like the best or more costly, and to dispose of it accordingly; at once defrauding the purchaser and tampering with his health. Among the matters removed by the miller are the large saline substances, which are indispensable to the growth of the bones and teeth, and are required, although in a less degree, for daily repair. Brown bread should therefore be given to nurses and to the young or the growing, and should be preferred by all, of whatever age, whose bones show a tendency to bend, or who have weak teeth. It is believed that brown bread will generally be found the best by all persons having sluggish bowels and stomachs, equal to the digestion of the bran. But with some it will disagree; for it is too exciting to irritable bowels, and is dissolved with difficulty in some stomachs. When this happens, the bran should be removed either wholly or in part; and by such means the bread may be adapted, with the greatest ease, to all habits and all constitutions."

Mr. Smith, in his late remarkable work on fruits and farinacea as the food of man,

gives some illustrations of this doctrine. "Bulk," he says, "is nearly as necessary to the articles of diet as the nutrient principle. They should be so managed that one should be in proportion to the other. Too highly nutritive is probably as fatal to the prolongation of life and health, as that which contains an insufficient quantity of nourishment." It is a matter of common remark among old whalers, that, during long voyages, the coarser their bread, the better their health. "I have followed the seas for thirty-five years," said an intelligent sea-captain to Mr. Graham, "and I have been in almost every part of the globe; I have always found that the coarsest pilot-bread, which contains a considerable portion of bran, is decidedly the best for my men." "I am convinced, from my own experience," says another captain, "that bread made of the unbolted wheat meal is far more wholesome than that made from the best superfine flour, the latter always tending to produce constipation." Capt. Dexter, of the ship *Isis*, belonging to Providence, arrived from China in December, 1804. He had been about one hundred and ninety days on the passage. The sea-bread, which constituted the principal article of food for his men, was made of the best superfine flour. He had not been long at sea before his men began to complain of languor, loss of appetite, and debility. These difficulties continued to increase the whole voyage; and several of the hands died on the passage of debility and inanition. The ship was obliged to come to anchor thirty miles below Providence; and such was the debility of the men on board, that they were not able to get the ship under weigh again, and the owners were under the necessity of sending men down from Providence. When she arrived the owners asked Capt. Dexter what was the cause of the sickness of his men? He replied, "The bread was too good."—*Chambers' Edinburgh Journal*.

Farmers' Daughters.

It is often remarked with some surprise, that farmers' daughters seldom prefer husbands of that profession; and many farmers believe that educating girls, produces a disrelish for rural life. Others have thought the blame was with mothers, in not confining them to business sufficiently to make it agreeable to them, or that they had neglected to impress them with the idea, that farmers were the only men suitable for husbands. In my humble opinion, if they would look to themselves for the cause, they would be quite sure of finding it.

It is not education we have reason to fear, but the want of it. The thoroughly educated woman understands her duties and responsibilities better, and is far better qualified to discharge them than she otherwise could be; neither do I believe want of employment to be any part of the reason.

Our girls hear much said of the safety of the agricultural profession—of the almost sure independence of the farmer; but have they ever seen, or ever heard of independence for the farmer's wife? Do they not see that for her there is no cessation from toil—that, as their father's lands increase, so do their mother's cares?

They hear that their father has worked *hard* long enough, and intends to relax from labour, and only oversee his business, without hearing it even hinted that their mother could live more comfortably. Though they see their father employ extra help when his work becomes troublesome—which makes the mother's task still harder—they see no indication of her toil being appreciated as long as she can endure it; and if help *must* be employed, it is not that she may live *easier*, but because she can not do what *must* be done.

And when the farmer finally determines to take his ease, and sells or rents his farm, he prudently suggests to his wife the necessity—as he has given up business—of her managing in such a manner as not to depend on him for funds; perhaps proposes to keep an extra cow, a few sheep, or something of the kind, to enable her to supply herself with necessaries. Who ever heard of a farmer's wife being able to live without work, while she had the use of her feet and hands?

There is no class of women of whom so great an amount of care and labour is required as among farmers, nor where the dependence of wives is more thorough.—*Genesee Farmer*.

AN EXTRA COW.—Dea. Quartus Smith, of Sunderland, has a cow ten years old, which on the 5th of December last, weighed 1,520 lbs. She came in on the 31st of January, and on the third day thereafter, she gave in twenty-four hours forty-eight pounds and three ounces of milk, from which were made three pounds and two ounces of butter of the first quality, a specimen of which has been sent us, and appears equal in every respect to the best made in the spring. She has since given fifty-one pounds of milk in twenty-four hours.—*Amherst Express*.

The Greedy Mole.

THE extreme voracity of the mole is well known. The shrew, which belongs to the same natural group as the mole—the insectivorous *carnivora*—would seem to resemble it in this peculiarity, according to a statement furnished to me by my esteemed friend Mr. Selby, of Twizell. He observes, in a letter received February, 1843, "What greedy gluttonous animals the shrews appear to be! One was caught alive, upon the snow, here, the other day, and brought into the house and placed in a glass box. A piece of raw mutton was given to it, which it attacked with the greatest voracity, the moment it smelt it, and continued eating almost without intermission, till it had devoured the whole of it. The piece, I should think, could not have weighed less than half or three-quarters of an ounce. When the shrew first seized it, it shook it as a dog does a rat, and then began to gnaw it with its sharpened grinders on one side of the mouth. It lived for a couple of days, almost continually eating; and previous to its death, which was very sudden, seemed in perfect health."—*Jenyn's Observations in Natural History.*

GYPNUM.—How does gypsum act? This is an inquiry which has often been made, and which is answered in various ways, even by the learned. True science can alone rationally direct the practical farmer. "All else," observes an erudite author, "is mere experiment—hazardous, expensive and conjectural." The beneficial effects of gypsum, or plaster of Paris, on growing crops, is to be referred exclusively to the power it possesses of fixing ammonia, and holding it for the gradual use or progressive appropriation of plants. It has been correctly demonstrated by the most careful and accurate scientific experiments, that one hundred pounds of gypsum will fix as much ammonia in the soil, as six thousand two hundred and fifty pounds of horses' excrement would impart to it. Ammonia is always present in the atmosphere, and hence the beneficial effects of this mineral, which absorbs and fixes it so as to render it available to the growing crop.—*Maine Farmer.*

WARTS on the udder and teats of cows may be easily removed, simply by washing them in a solution of alum and water. We have known this application to result favorably even after all other prescriptions had failed, and the disease seemed to have advanced beyond the possibility of cure. Try it.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, THIRD MONTH, 1847.

It will be observed by a communication from James Gowen, on page 243, that he is making arrangements for the opening of an Agricultural College at Mount Airy, Germantown, about eight miles from Philadelphia.

An establishment of this character, in this vicinity, has been a subject of conversation among many of our intelligent citizens for years past, and numerous evidences have been furnished from agriculturists and others, at a distance—particularly in the Southern States, that many advantages were anticipated from the realization of such a scheme.

The location—in itself an important consideration—is every thing that could be desired. The readers of the Cabinet need not be informed of the capital—the industry—the enterprise, and sound judgment, which James Gowen has brought to bear upon his farming operations, nor of the successful results which have crowned his efforts. In the Cabinet of the sixth month of last year, under the Editorial head, will be found some remarks which are not foreign to the subject, though the plan now in contemplation, had then barely been suggested.

This is a matter of no ordinary importance to the agricultural community, independent of the results of the enterprise as it may affect our friend. It is an arduous undertaking, and must involve considerable risk of capital, as well as bodily and mental exertion. Most men would shrink from it, and perhaps but few incur the responsibility. James Gowen is prepared and willing to meet it in its various aspects. Our hope is that the public will appreciate the effort, and meet him in a generous spirit: that not only his individual interests will be promoted, but that also those of our common country will be so benefited, that he shall be enabled to feel in after life that he has not lived in vain.

Our brethren of the Agricultural press throughout the country, as well as other papers, are respectfully requested to copy the circular on page 243, and thus serve our common cause.

A SPIRITED and enterprising friend of ours, a farmer of "Little Delaware," informed us a few days ago that he was preparing to plant 120 acres of Indian corn this spring, and that he had just purchased seventeen tons of guano at a cost of about \$300, which he should apply to the ground.

A FRIEND—J. Y., of Towson Town, Md.—makes the enquiry, if any of our "readers have been successful in destroying *Cuck-grass*, that greatest of all pests." We apprehend there is no better mode of destroying this pest, than by thorough ploughing. He also asks for information from those who have practised *soiling*: their method, and the results. We would be glad to receive communications on these matters.

It is an unpleasant task to be obliged to put our friends upon their guard in relation to a young man of respectable appearance, who has been active in endeavouring to procure subscribers and collect bills due for the Farmers' Cabinet. Two receipts have been shown us, signed S. P. COLMAN, both given to persons in the vicinity of Camden, N. J., and both dated "Dec. 24th, 1846." The Editor knows no such person, and has given no authority to any such person to act for him in the premises. He feels at a loss for words to characterise such evidence of meanness and dishonesty. *Swindling* is a wretched business for a young man to begin the world with.

Our friends are particularly requested to be careful in this matter, and to pay money on our account to no one, unless they are satisfied he is authorised to receive it. Those to whom it is inconvenient to call at the office, either as new subscribers, or for the payment of bills, can readily remit by mail. It is fair, we think, that they should pay the postage; if they think otherwise, the editor will do it.

It is probably not much more than a rough guess, but we have seen it stated, that the surplus of corn in the State of New Jersey is worth \$1,500,000.

The quantity of rain which fell in the 2nd month, 1847, was a little more than four inches and a half.

4.57 in.

Penn. Hospital, 3rd mo. 1st.

SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

Fruit & Ornamental Trees.

The subscriber offers for sale an extensive assortment of Fruit & Ornamental Trees of the most approved varieties, of fine size and warranted true to their respective names. Orders may be left with J. Tatam, No. 50, N. Fourth street, where catalogues may be obtained or E. P. Middleton, No. 9 Market st.

EZRA STOKES,

Mt. Laurel, near Moorestown, Burlington co., N. J.

Second month 15th, 1847.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Ryegrass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoes Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Given in parcels to suit purchasers.

Philad., Feb., 1847.

M. S. POWELL.
1c

A FARM FOR SALE.

A FARM in Gloucester county, N. J., containing about 175 acres of upland and meadow, and some young timber, is offered at private sale. The soil is well adapted to the growing of wheat or grass, and a large proportion of it is in a high state of cultivation. There are on the premises a large stone house and kitchen—a large stone barn, with other out buildings, and also a young apple orchard just come into bearing. It is about ten miles from Camden,—four from Woodbury, and a short mile from the river Delaware. On the South and North, respectively, it is bounded by Great and Little Mantua creeks; and the Paulsborough road from Camden, runs through it. A steam-boat to and from Philadelphia, ran daily up the creek last summer, stopping at a landing on the premises; and the same convenience will probably be continued hereafter.

This farm is well worthy the attention of a man who would make an investment in property of this character.

Enquiry may be made of Joseph Whittall, N. E. cor. of Buttonwood and Marshall streets, Philadelphia,—of Benjamin Whittall, near Woodbury,—of David Whittall, on the premises, or of the Editor, at this office.

Third mo. 1st, 1847.

HOUSE AND LOT FOR SALE.

The subscriber offers at Private Sale, a lot of half an acre of ground, on which are a two story brick dwelling and kitchen, barn and other out buildings. It is pleasantly situated at Marlton, in Burlington County, New Jersey, about eleven miles from Camden, and five from Medford.

Enquiry may be made of EZRA EVANS, or CHARLES STOKES, in the neighborhood, or of JOSHUA WHITTALL.

147 Coates Street, below Fourth, Philadelphia.

Third mo. 15, 1847.

R. SINCLAIR & CO.

Plough and Agricultural Machine MANUFACTURERS & SEEDSMEN,

BALTIMORE:

Have for sale the Maryland Self-Sharpening Plough, several sizes, warranted the most durable and simple Sub-soil Plough in this country; also Corn and Cob Crushers, Cylindrical Straw and Corn-stalk Cutters, Burr Stone Mills, Corn Shellers, for hand and horse power, Horse Powers and Threshing Machines, Fanning Mills, with a numerous assortment of Ploughs, Drill Machines, Harrows, Farming and Garden Tools, Seeds, &c.

See Catalogues for particulars, to be had of us gratis.

Balt. March 15, 1847.—2 times.

WANTED, 50,000 Apple, and 20,000 Pear trees, one to three years old. Apply to J. Moulton, Eighth and Chesnut streets, Philadelphia, or by mail, post paid. March 15th.

Valuable Farm at Private Sale.

THE subscriber offers for sale the valuable FARM on which he has resided for a number of years past, situated in East Bradford Township, one mile west of the flourishing Borough of West Chester. It comprises about 60 acres of naturally fertile and well improved land, under good fence, and well watered. The buildings are of stone, large, and in good repair. The mansion is pleasantly situated, possesses many conveniences, and is of modern finish, 44 feet front by 32 feet deep, with an eight feet entry, two rooms on each side, besides kitchen and wash-house, and six rooms in the second story. Pure water is introduced into the house and barn-yard by means of a force pump and water wheel propelled by a never failing stream.

The grounds are planted with fruit, ornamental trees and shrubbery, with a good orchard in full bearing. There are also a three-story barn, 40 feet by 56 feet, a carriage-house, work-shop, ice-house, wood-house, and an excellent and convenient milk-house.

This property is eligibly situated on the main road from West Chester to Lancaster, in an unexceptionable neighbourhood, and offers considerable inducements to one wishing to retire from active business, or to engage in agriculture on a moderate scale.

Apply to the subscriber, residing thereon, or to John Lippincott, No. 65 Marshal street, Philadelphia.

CHARLES LIPPINCOTT,

21. West Chester, Chester county, Pa.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE, AT D. O. PROUTY'S AGRICULTURAL WAREHOUSE,

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

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September 15th—41.

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GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.

Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA

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The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW

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The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Swede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

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JOSIAH TATUM.

Philadelphia, Third month 15th, 1847

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October 15th, 1845.

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A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Price, until 1st of next month, for seven barrels or more, \$1 87½ per barrel, containing 4 bush. each. Any number of barrels less than seven, \$2 each, or 37½ cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for corn.

JOSIAH TATUM.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

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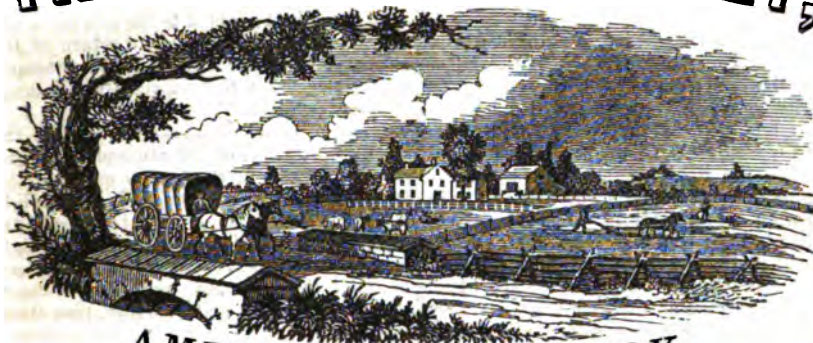
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THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LARRIE.

Vol. XI.—No. 9.]

4th mo. (April) 15th, 1847.

[Whole No. 147.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Sheep, Mountain Lands, &c., in Virginia.

I RESIDE in Amherst county, about twelve miles east of the Blue Ridge, and here, as through the county generally, the foddering of sheep, as well as all other stock, begins about the 1st of December and ends about the 15th of April—that is, from the time the annual grasses and weeds are unfit for food, until the budding of trees. On the mountains, the foddering season may be counted from 1st of December till the 5th or 10th of May; but it is remarkable that on the mountains, cattle, hogs and sheep, require less food given them than in less elevated situations. This I can account for in no other way, than by estimating the superior capacity of the mountain soil for producing a heavy sod of grass, weed roots, and fungi on rocks and logs; all of which are nutritious food. Small flocks of sheep, and some colts, and yearling cattle, were some years past wintered on the mountains of Amherst, exclusively on the growing rye;

CAR.—VOL. XI.—No. 9.

but now the rye crop is nearly abandoned, and foddering is required.

Some fifteen or eighteen years past I kept a small flock of 30 or 40 sheep, which were never fed through the year, yet kept in healthy condition. They fed on dry grass, pine leaves, and twigs of shrubbery, on poor and unenclosed grounds; but certainly a large flock must either be foddered during winter, or given extensive pasturage on grass or rye. Rye, when sown on our mountains in August, will by 1st of December make a heavy sod, and afford food for stock throughout winter, and then yield a good harvest. It will grow through all the months except January and February, and indeed in open weather, somewhat in these. The difference in duration of winter between the northern and southern portions of Virginia, I would estimate at thirty days. Spring, about the centre of Amherst, and at my residence, is perhaps fifteen days later than on the eastern shore, and ten days earlier than on the Blue Ridge. I have just had a conversation with an old man, and we agree that our snows during the year will average about six; in the general two to four inches deep—very seldom eight inches; lying generally one day, and seldom more than two or three days. On the mountains the snows will number say eight or nine, from three to six inches deep, seldom twelve inches, and lying from one to six days.

Two farmers from Washington county, Pennsylvania, have lately been here for the

purpose of examining the mountains of Amherst, and are so well pleased that they have determined to bring hither a flock of 900 superior sheep in the spring.

Unimproved mountains are worth in Amherst from 25 cents to \$1, and at the latter price, that can be had, which when cleared or tilled, will spontaneously cast up green sward and white clover in superior order. The Cold Mountain, the Tear Jacket Mountain, and the Rocky Mountain, are superior for grazing sheep, to any other lands I have ever seen. These all lie in the county of Amherst, and are one continuous ridge, without any ugly breakers, and all very rich. But few trees and bushes are found here, and wherever the sun can get fairly at the land, the green sward and clover have possession. The broom is a great pest on our arable lands, but on the mountains no broom is to be seen, except where poor and slaty; and here it is not the broom proper, nor a pest, but a sedge; which grows scattering and yields some food.

There are but few flocks of sheep in this county, mine being the largest, say 400; and unfortunately they have the rot amongst them, introduced by a flock of 80, which I purchased in the county of Rockbridge. This is the only case of rot I have seen for many years, and trust I shall never see it again. I know of no remedy for rot except high feeding, but from experience will say for certainty, that oil poured into the nostrils of a sheep will expel the worms therefrom; and that spirituous liquor will destroy the poisonous effect of ivy and laurel, and I believe any other poison on the stomach of a sheep—and why not of any other animal?

I am always ready, and take delight in casting in my mite for the advancement of the cause of agriculture, but hope no stranger will write to me a private letter on the subject of agriculture. Indeed I am persuaded very few would thus write me, if they understood my qualifications and works.

ZA. DRUMMOND.

Feb. 22nd, 1847.

From the American Farmer.

Potatoe Disease.

To the Editor of the American Farmer:

DEAR SIR,—So much has already been said upon the subject of the rot or disease in potatoes, that there seems neither room nor occasion for saying any more on the subject, nor do I intend to venture a word as tending to start or suggest a new hypothesis—holding, as I do, to my old theory, that to atmospheric influence alone is to be ascribed the cause of the disease, and repeat-

ing my advice to farmers, to discard all nostrums, and to plant in such soils and with such manures, as from time immemorial had been found best adapted to the culture of the potatoe. For until we have a return of the ordinary and genial weather of our autumns, we are not likely to be favoured with crops of sound potatoes.

It may be admitted, however, that the deleterious effects of the atmosphere might, in some degree, be shunned or modified; for instance, early planting of early sorts, might by ripening, and being gathered in all August, escape; as also, deep planting on light soils—the soils best adapted to the potatoe—by rendering the tubers more impervious to the excessive heat and humidity, that otherwise would the more readily reach them if nearer the surface, and proportionally affect them. But I am totally opposed to adventitious and concentrated manures. The barnyard manure, long litter from the stables, and plenty of it, the world over, is the manure for a good crop of potatoes. It is the manure I have always used, and who in my region can compare with me for raising fine potatoes? Sometimes, it is true, I have used gypsum, sprinkled on the manure, raked in, over the sets, in the furrow—but why did I this? Not certainly to weaken or dissipate the manure, but to protract its efficacy, keeping as long as possible a continuity of its strength throughout the formation, and pending the whole time of the growing of the potatoes. By this means you could trace distinctly the blackened manure, in lime, on the surface of the ground, as turned up by the plough, on taking out the crops; this was so obvious and striking in 1842, that when I had seeded the same land that fall with wheat, a gentleman remarked, that the manure I had used was uncommonly well rotted to have harrowed in so finely. He was not a little surprised when told it was rotted in growing the potatoes, which had just been taken from the same ground. That season I had over four hundred bushels of fine Mercer potatoes to the acre, and the next season fifty bushels of white wheat to the acre, without any additional manure. If an abundance of unfermented stable manure be a cause, a prevailing cause of rot, why was not this crop rotted, and why have not the crops, so manured for a century, been diseased?

I have been led to these remarks, from reading an article in your last number on the potatoe disease, from the pen of my spirited and intelligent friend, W. W. W. Bowie, Esq., than whom, a more ardent and chivalric champion can nowhere be found on the field of agriculture. But if

not a *better*, I may claim to be an *older* soldier than he; and as Brutus slew his best friend for the good of Rome, I may be permitted a tilt with my noble friend for the good of the *tillers of the soil*, without being considered at all *Brutish*. Indeed there are certain reasons why I should feel pugnacious when any one presumes to teach the way of growing the "*Murphies*," except he comes from the *sod*. The late gifted and lamented Nicholas Biddle, the able and distinguished President of the Philadelphia Agricultural Society, used to say, that it was presumptuous in any man in our Society to compete with me in raising potatoes. Alas, this badinage awakens now, other thoughts and associations—my poor country—her wit, her humour, her irrepressible fortitude and constancy are being at this moment severely tried, under a calamitous dispensation of Providence! She has through ages borne much from other hands: may she struggle through this dispensation as becomes her, and rise from the chastening, wiser, purer and better! But I must not indulge thus, else I shall forget the task I have undertaken.

In the article referred to, much consideration is given to a change and renewal of seeds. Well, to the efforts of producing other sorts, and seeding with them, instead of those long in use, there can be no objection; new varieties will be produced, and much good may result from such experiments in the main: but I apprehend that seedlings will be found as liable to the rot as the oldest sorts: experience strengthens me in this opinion, for last season I had seedlings diseased, while the "*Lady Fingers*," a white kidney variety, which have been grown as an early potatoe some forty years on the farm I now hold, escaped entirely; nor has it been diseased any season of the prevailing rot.

Potatoes that are starved by not allowing them sufficient manure to grow to full size, may in some degree escape the disease, as there would be little of them to kill; same as poor wheat, with small heads and skeleton straw, may escape blight or rust, while a well grown, succulent crop, promising 40 to 50 bushels to the acre, may be badly blighted—but it would be bad husbandry to work for only 10 bushels of wheat to the acre, or some 40 to 50 bushels of potatoes to the acre, through the fear of blight and rot. It is impossible to have a good crop of potatoes without an abundant supply of manure. I have seen them planted in rich ground and well manured, but never knew them rotted in consequence; the only injurious result was, that they were not quite

so mealy or so fine in flavor as they otherwise would have been, had soil and manure been better proportioned to the wants and quality of the potatoe. I recollect a tremendous yield raised on an old sheep walk—they were sound, but rather ill-tasted, somewhat bitter, and were fed to the cattle, but they were as sound, so far as rot or disease was concerned, as any potatoes I ever saw. Heavy manuring on rich land, is an ill-judged practice, but light manuring or no manuring at all, on poor lands, is still worse.

The mixture prescribed by my esteemed friend could not do much harm, provided there be first "*quantum sufficit*," of good manure, but if he will permit me to to revise the prescription, I think I can render it somewhat more admissible;—first, I would reject the lime, or if used, let it be sprinkled on the surface after the planting is finished—the gypsum or plaster to be used in the furrow instead of the lime. If the salt is to be used, leave out the saltpetre—leave out soot and increase the quantity of charcoal. Thus, one bushel of ground gypsum, one of salt, one of ashes, two of fine charcoal—the soot and lime may be strewn any time on the surface previous to the first harrowing of the potatoes, after they are up. The mixture, as above, may be used to every acre, strewn by hand, evenly, after the manure has been raked in or shook over the potatoe sets;—the drill, to be covered—but I protest against the dose unless there be a sufficiency of manure to support the potatoe in growing.

My potatoes were not affected by the disease, except in 1843, and that I think was owing to their not having been covered sufficiently deep at planting. The last season I had a fine crop of sound Mercer potatoes, over one thousand bushels, while my neighbours around me had hardly on an average more than the seed,—they still, despite all entreaty and example, plant shallow and use the plough instead of the cultivator or hoe harrow, ridging them up on either side in a bank, exposing them the more to the action of the sun and atmosphere.

Since 1843 I have been particular in my observations as to the condition of the potatoe fields and patches around me, and have uniformly found, that on hills with a southern exposure, and where the covering was light and shallow, the disease prevailed most. Why was this?—because the tubers from their exposure and superficial covering were instantly affected by the extreme heat—sultry or humid heat, which in general provoked them to an incipient state of vegetating, hence the derangement of their tissues and partial decomposition.

Last season in taking out a patch of potatoes from an orchard on the college grounds adjoining me, it was discovered that under the shade of the trees the potatoes were sound, while those in the spaces, in open ground, were considerably affected by the rot. The disease therefore is owing to the influence of the atmosphere—heat with great humidity, unnatural spring-like weather that sets everything to growing and blossoming; affects also the potatoes to begin to grow, as if they were planted for that purpose; hence we can easily imagine that when this action is produced, the stalks or vines that were still vigorous and adhered to them, would immediately lose their hold on the roots below, and die.

When I recommend deep planting on light dry soils, I mean only as deep as would be safe to go—say six inches. Every body is aware that they could be planted so deep as never to come up, and that potatoes planted deep in wet stiff soils will rot in all seasons.

I have thus, through a deep and abiding regard for the interests of the farmer, been led to question the soundness of your respectable correspondent's views upon the disease and culture of the potatoe. He is too generous, I know, to ascribe to me any motive but the right one, and I am as free to acknowledge his disinterestedness and zeal in the same common cause.

Respectfully, your obedient servant,

JAMES GOWEN.

Mount Airy, Philad., Feb. 15th, 1847.

Anecdote of the Horse.

ATTACHMENT TO MAN.

IN submission and attachment to man, the horse is equalled only by the dog and elephant. He soon learns to distinguish his master's voice, and to come at his call; he rejoices in his presence, and seems restless and unhappy during his absence; he joins with him willingly in any work, and appears susceptible of emulation and rivalry; and though frequently fierce and dangerous to strangers, yet there are few instances on record of his being faithless to those with whom he is domesticated, unless under the most inhuman and barbarous treatment. Colonel Smith relates the following affecting incident of attachment in a charger, which belonged to the late General Sir Robert Gillespie. When Sir Robert fell at the storming of Kalunga, his favourite black charger, bred at the Cape of Good Hope, and carried by him to India, was, at the sale of his effects, competed for by several officers of his division, and finally knocked down to

the privates of the eighth dragoons, who contributed their prize money to the amount of £500 sterling, to retain this commemoration of their late commander. Thus the charger was always led at the head of the regiment on a march, and at the station of Cawnpore, was usually indulged with taking his ancient post at the colour-stand, where the salute of passing squadrons was given at drill and on reviews. When the regiment was ordered home, the funds of the privates running low, he was bought for the same sum by a relative of ours, who provided funds and a paddock for him, where he might end his days in comfort; but when the corps had marched, and the sound of the trumpet had departed, he refused to eat, and on the first opportunity, being led out to exercise, he broke from his groom, and galloping to his ancient station on the parade, after neighing aloud, dropped down and died.—*Home Magazine*.

American Institute—Farmers' Club—Gardens.

March 2nd, 1847.

Judge Livingston in the chair.

Chairman—The subject for the day is the Kitchen Garden.

Mr. Meigs—I have been a gardener by choice for a great many years, in connexion with my professional employments. As to the general plan of a garden, I am pleased with the idea given by Chancellor Livingston many years ago to our old Agricultural Society. He said that on the north of the garden should be placed the tallest trees, and then all other trees, shrubs and plants in succession towards the south side of it, as they diminished in height down to the creeping plants, such as the strawberry. So that looking on the garden, the tops of all the plants would be rising gradually one above the other, like the benches of an amphitheatre from the south to the north, where the tall trees would break the northern blasts. One thing I recommend in a garden. Let the paths be turnpiked and raised to at least the level of the tops of the beds—in order that in damp or wet weather one can walk over them comfortably—and that in showers, the water may settle on the beds rather than form, as it does in our sunken garden paths, so many muddy ditches. And it will be found, that every square yard of every garden has its appropriate fitness for one plant more than another. I used to supply my neighbours with very superior celery plants, by planting the seed in a bed partially shaded by trees. Shade is requisite as well as the sun's rays—some plants need

more of one than the other. The French agriculturists say, that in common seasons the clouds furnish the necessary shade for most plants—but they recommend the proper use of spread cloths to shade some plants at proper times. Mr. Watson, late from England, tells me of his mode of setting out cabbage plants, which was new to me. He sets out the plants whenever it is convenient, dry or wet time—and after they are set, he puts boards along both sides of the rows of plants within an inch or two of the plants. The effect of which covering of the soil, is to cause the plants to thrive in a singular manner, and also to do another vast service to the gardeners, by preventing the growth of weeds. The ground should be dug two spades deep—and in drought, the oftener the ground is hoed or stirred the safer the plants, however dry the surface of the soil may be. All farmers and gardeners, living as they do most at home, without opportunities of comparing their work with others, are extremely apt to think that they know all about it, but occasionally when they chance to see another man's garden far superior to their own, they feel a mortification, which however is seldom owned.

Mr. Pike—I claim to be an exception to that rule, for with all my investigation and pains, I find that when I want the best vegetables, I must go to our markets for them. For instance, I tried to raise horse radish, but that in the markets goes entirely beyond mine.

John Lodge of Morrisania—I have been a working gardener more than thirty years. When one wants to begin making a garden, he must first examine his soil deeply, and see that it is of the right stuff. He should lay out his garden at right angles. His paths must be high instead of being ditches, and he must trench the whole garden from two and a half to four feet in depth, according to the character of the soil. If it requires draining, that must be done. I can trench from two to three square rods in a day; the effect is like that produced by the subsoil plough. This deep tillage gives room for the tender fibrous roots of plants to go deep and draw moisture and nutrition. Why, sir! the onion will send down its little fibrous roots from two to three feet deep. No tree should be in a kitchen garden, nor any flowers, they must be separated a considerable distance from each other. I have worked on 126 acres in England, where all the ground was dug with the spade, and when my spades, which at first are eleven inches long, have worn off from three-quarters to an inch, I throw them aside. When the garden has been trenched as deep as I

have stated, the work is done for seven to fifteen or even twenty years, and in it every plant will have the proper chance to thrive. I don't throw all the subsoil upon the surface in this trenching. Paths are useful in separating plants from each other as well as for convenience to the gardener. Shade is necessary for many plants. Our sun here is often too hot for them, gooseberries especially flourish in shade—strawberries ought to be set in deep dug ground. Deep digging has the effect of enabling the soil to retain moisture, instead of being dried up.

Mr. Pike—But it won't do to drain our soil so much, we have too much dry weather for that. Paths an inch or three inches below the surface of the land are good; I have them so in my nursery.

Ironius Smith of Astoria—I can tell our friend Mr. Pike how he can raise fine horse radish; it is generally stuck away in some corner or scattered about the garden. I dig trenches two feet deep, fill them half full of good manure of cows, pigs, &c. I then fork up the bottom of the trench so as to mix soil and manure, then fill in the trench with good soil, then make holes at suitable distances, deep, and put in the roots. They grow as long as my cane, tapering downwards like a carrot, one solid root. A few tenders only are necessary; when I want horse radish, I cut off below the surface, leaving the late root, which grows again, so that they will for a long while continue a fine supply every year.

Mr. Lodge—After the summer is over, always dig up the garden well, and leave it so, for the benefit of the winter snows and rains.

Judge Van Wyck—We reasonably expect from any garden or farm on a small scale, a great production. Before we commence a garden, we ought to know what the soil is to a considerable depth; whether it contains the four primitive earths—lime, sand, clay, and magnesia in proper proportions; then if all is right, work and manure it well; for roots it should be trenched deep. Plants then find their nourishment, grow finely, are tender, and are always sought in our markets. The morning sun is of peculiar importance to plants. It is said that one hour of it in the morning is worth two in the afternoon, and we should avail ourselves of a knowledge of our climate so as to manage plants properly; we here generally have too much of the heat of the sun—it is far different in the moist climate of England.

Mr. Wakeman—The greatest produce of plants is best tested in gardens. Mr. Lodge says he has paid in England \$250 a year rent per acre for a garden, and has produced

from the acre \$1200 worth of vegetables a year. If we understood agriculture, population could be greatly increased and sustained better than now. Mr. Bergen of Gowanus, has sold the raspberries raised on an acre of his farm, for fifteen hundred dollars in a year. In New Jersey, ten thousand cabbages are raised on an acre; which, at four cents a piece, a reasonable price, amounts to four hundred dollars; and they often sell for more at Ironius Smith's place in Astoria; on two and a half acres there are raised vegetables abundant for thirteen in family. From his two cows 5527 quarts of milk a year, worth four cents a quart, are obtained. From twenty-two hens, he had in a year 2870 eggs. He has five hogs, and employs but one man in all this work. At this rate of cultivation, if it existed in Ireland, there would be no starving there. I see that Kane in his Irish Statistics, a work esteemed by the rulers of England, states the county of Armagh, which is almost one-seventh lakes, to be so well cultivated, that the people are not only well fed and clothed, but export large amounts, and that if all Ireland was as well cultivated as Armagh, it could support two and a half times as many people as it now does, and that under high cultivation of which it is capable, it could support thirty-five millions of people.

Mr. Lodge—That is undoubtedly true of high culture. I have seen such culture in England, and such cultivation too turns out good and able men, capable of taking charge of the finest estates of the nobility.

Mr. Hyde—How many different crops can be had in a year?

Mr. Lodge—Four; radishes, peas, bush beans, and cucumbers.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

Vinegar.

I WAS interested in reading an article in the last No. of the Cabinet on vinegar making, by Prof. L. D. Gale. We are there told, that in the western States, where a good article is rarely found, it is often made of diluted whiskey, mixed with sour beer and other fermenting liquors. In Texas, by sour or green grapes and the washings of whiskey barrels. In England the vinegar is made either from the distillation of wood, or from the fermentation of malted liquors—that English vinegar generally contains sulphuric acid—that this is allowed by government to the amount of two to five per cent. The Professor further states, "that as this prevents the formation of mother, which is a vegetable substance, he presumes this ob-

ject must constitute the basis of the permission." In this county and other parts of the State where apples generally abound, the vinegar is chiefly made from cider, and that an article of the very best quality for table use, can be obtained from this liquor without the addition of a particle of sulphuric, tartaric, or any other acid, or drug, the writer of this can from experience attest. This vinegar, it is true, may not possess the requisite strength for use in white lead works; indeed I have never known it so strong as in the least to eat up or destroy the pickles it was intended to preserve—to eat holes in the table cloth, or to exhibit other similar tests of great strength, which it is said some of the vinegar in the market will do. But although this cider vinegar may be comparatively weak, and incapable of souring a good disposition, still to make it in the natural way, is a work of time—as the Editor justly observes, "it is not made in one day, nor in a hundred." But when once a farmer has a cask of good vinegar, he may make it in one day—that is, he may draw out of this cask every day if he will, a small portion of vinegar, and return the same quantity in cider, without any perceptible deterioration. And it is better as a general rule, not to add more cider than you have of vinegar in the cask you are about to replenish, and in a few months it will acquire its natural strength. As regards the substance generally termed "mother," the better the vinegar the smaller will be the proportion of mother in the cask. And although in the natural process mother is always formed before the cider is converted into good vinegar, yet it will be found more freely to abound in a weak description of cider than in that which is stronger. It would seem that cider undergoes several changes before it is converted into good vinegar, and during one of these changes it is very apt to find its way out of the cask. Indeed this is often the case from the giving way of the hoops, which are generally too light, and are soon destroyed by the rust—paint affording but little protection. Vinegar, it may be remarked, will generally rack off clear and transparent, even from casks that may contain a portion of mother, and if it be a genuine article, it can scarcely be doubted but that it will remain so, even if it should find its way across the Atlantic. Be that as it may, I should be very unwilling to get rid of it by the addition of five or even two per cent of sulphuric acid. In the "Farmers' Encyclopedia," if I mistake not,—the work not being at hand to refer to—it is stated, one part in every 1000 of the free sulphuric acid is in England allowed to

be used in the vinegar—a proportion exceedingly small compared with the other, but which if correct, might not do a great deal of harm. In making sometimes fifty barrels or more a year of cider, and that chiefly for vinegar, my reliance has mainly been on the oxygen of the air, as the acidifying principle, and I have found that by frequently racking it off, and changing it from one cask to another, and taking care not to have the casks too full, the work has been accelerated. A cask half full of cider will go to vinegar in about half the time that it would, were it entirely full. After all, it will perhaps be said it is a slow way. It is slow—but this slow way of getting along, is what farmers are accustomed to; their teams often move slow—their corn frequently grows slow—they make their money slow, and they sell their vinegar slow. But cannot a farmer put this sulphuric acid to some legitimate use? Let him try its efficacy in dissolving bones, a quantity of which can be found on every farm, and often present an unsightly appearance. If it will answer that purpose, as no doubt it will, various experiments can be tried with the preparation, and the results made known for the benefit of others. This would be serving a good cause,—need not be attended with any great expense, and possibly might lead to some valuable discovery. R.

Salem county.

SOAP AS A MANURE.—T. Dalton, a silk dyer, says in the London Agricultural Gazette, that he uses 15 cwt. of soap weekly, to discharge the oily matter from the silk, and forming of itself a kind of soap, the whole of which yields from four to six thousand gallons of strong soap suds per week. This he has lately applied to his farm, and “its effects are most extraordinary.” It has been used only one season, and its results cannot be accurately given, but he considers it more powerful than any other manure.—*Southern Planter*.

Many barrels of strong soap suds are annually thrown into the gutter, and run to waste from every farmer's laundry. Could not these be poured on the manure heap, or otherwise saved to increase his “bank,” and thus help to obviate the necessity of purchasing foreign manures?—*Ed.*

KEEPING FARM ACCOUNTS.—Let any farmer make the experiment, and he will find it as interesting as it is useful, and both interesting and useful, to know from year to year the actual produce of his farm. Let everything, therefore, which can be measured and weighed, be measured and weighed;

and let that which cannot be brought to an exact standard, be estimated as if he himself were about to sell or purchase it. Let him likewise, as near as possible, measure the ground which he plants, the quantity of seed which he uses, and the manure which he applies. The labour of doing this is nothing compared with the satisfaction of having done it, and the benefits which must arise from it. Conjecture, in these cases, is perfectly wild and uncertain, varying often with different individuals, almost a hundred per cent. Exactness enables a man to form conclusions, which may most essentially, and in innumerable ways, avail to his advantage. It is that alone which can give any value to his experience. It is that which will make his experience the sure basis of improvement; it will put it in his power to give safe counsel to his friends, and it is the only ground on which he can securely place confidence himself.—*Norristown Herald*.

SWEET POTATOES.—It is pleasing to hear the praises of anything we love, and it is therefore peculiarly gratifying to find a long commendation of the sweet potatoe in the New Orleans Tropic. From it we learn, that beds high and dry should be ready for the plantings, and the fields deeply ploughed for the coming crop. A new, loose soil, is decidedly best for the sweet potatoe, and it should be thrown up in high ridges, only when the plants are ready for setting out; when made long before planting, the ground becomes close and hard, which prevents the vine from growing kindly. There is no better substitute for bread, and none more healthy; all children are particularly fond of them, and when used by them freely, in the latter part of summer and fall, they never have what is called the “summer complaint.” An acre of ground has been known to yield twelve hundred bushels; and in the South, with fair cultivation, from three to four hundred bushels may be produced beyond a doubt. There are many varieties, but the very best is called the Yam, in the south-west; in Carolina it is known as the “Pumpkin Spanish.” There is now no difficulty in keeping the sweet potatoe perfectly sound all the year, and the market is always good. To prepare them, for the table they should be nicely washed and baked in an oven—never, never boiled. All animals eat them, raw or cooked, with great avidity, and cows give more milk when fed with them, than with the same weight of any other food. It is indeed a most valuable crop for planters.—*Exchange paper*.

Woman's Cares at Home.

We have repeatedly met with the following remarks in our exchange papers, but cannot tell where they originally appeared. We trust our male readers will not cast them aside, with barely the inquiry, what they have to do with *Agriculture or Rural Economy*? Many a wife may think there is quite as much truth as poetry in them.—Ed.

My heart always "stirs within me" when I read selections made by editors of newspapers, which are designed for us married ladies, setting forth our duty in relation to "making our homes happy to our husbands—that we should always welcome them with a cheerful smile when they come in from the cares and fatigue of the day, and do all we can to make married life pleasant to them," &c. Now this is all well, I acknowledge, and I trust I strive to reduce that theory to practice. But allow me to inquire if the cares and fatigues of the wife are always appreciated by the husband?

Shall I give a short sketch of domestic life as it is; not of course describing a family as it should be, but I wish to give a fair example of every-day life at home.

My neighbour, Mr. Benson, is a lawyer by profession, and is what the world calls a respectable man. His income is small, but he married a lady who was able to furnish their small house handsomely, and they have some hopes of property in reversion.

Mrs. B—— has been a wife twelve years, and is the mother of five children, the youngest but a babe, and the family are as happy as the larger portion of families.

It is a Monday morning, and this speaks "unutterable things" to a New England wife, who has been married a dozen years. Mr. Benson has had his breakfast in season—has kissed the children and gone to the office, where the boy has a good fire—the books and papers were all in order, and Mr. B. sits down to answer a few agreeable demands upon his time, which will evidently turn into cash. He goes home to his dinner punctually at one o'clock; it is ready for him—he takes it quietly, perhaps frolics ten minutes with the baby, and then hurries back to his office. At the hour for tea he goes home—everything is cheerful, and to quote the simple rhyme of an old song:

The hearth was clean, the fire was clear,
The kettle on for tea;
Benson was in his rocking chair,
As blest as man could be.

But how has it been with Mrs. Benson through the day? She has an ill-natured girl in the kitchen, who will do half the

work only, at nine shillings per week. Monday morning at eight o'clock—four children must be ready for school—Mrs. Benson must sponge their faces and smooth their hair—see that books, slates, pencils, paper, pocket handkerchiefs,—yes four of them,—all are in order, and now the baby is crying—the fire is low—it is time Sally should begin to wash—the parlor, the chamber, the breakfast things are all waiting. Well, by a song to the baby, who lies kicking in the cradle—a smile to smooth ruffled Sally, and with all the energy she can summon, things are straightened out, and the lofty pile of a week's wearing begins to grow less; but the time shortens with it—it is almost dinner time—by some accident the joint of meat is frozen—company calls—Mr. Benson forgot to get any eggs on Saturday. Mrs. B. must do the next best way—the bell rings twelve—the door opens, and in rush the children from school. John has torn his pantaloons. Mary must have some money then to get a thimble, she has just lost hers. William has cut his finger with a piece of glass, and is calling loudly for his mother.

Poor Mrs. Benson endeavours to keep cheerful, and to look delighted in the hubbub; and now the dinner, by her efforts alone, is upon the table; her husband comes in, and perhaps wonders why the "pie is not a little better warmed;" and with this comment, and a smile on the baby, he is off till it is time for tea. I forbear to finish the day, Mr. Editor, and I shall say the afternoon is made up of little trials, too small to mention, but large enough to try the faith and patience of all the patriarchs.

Now, sir, this wife surely has borne the "burden and heat of the day!" her limbs are wearied, her whole energy of mind and body exhausted, and she is exhorted to "welcome her husband with a smile." She does it, for woman's love is stronger than death. I would ask, should not Mr. Benson give his wife a smile? What has he done to lighten her cares through the day? How is it? In nine cases out of ten, he wishes Mrs. Benson would put all those noisy children to bed; he should be glad to have her tell David to go to the post office for letters and papers; and at length, when half way between sleeping, he looks at his pale, exhausted *help mate*, and exclaims, "Well, wife, you begin to look a little fatigued."

I pray you now, Mr. Editor, to be more just, and now and then exhort husbands to do their part towards making home more agreeable to their wives, when the latter have, like Atlas, borne a world of cares and vexations through the day.

For the Farmers' Cabinet.

The Potatoe Disease.

MR. EDITOR,—Those who have but recently commenced the study of agricultural chemistry, may ask, if "Chemico" is correct in his theory, that the potatoe disease is caused by a surplus of carbonic acid, how is it that the potatoes do not become diseased earlier, for it cannot be denied that the carbonic acid is generated during the entire growing season? I will endeavour to answer this query. It is well known that the carbonic acid which is generated prior to the first of July, for instance, is divided among all the varieties of plants that grow in our climate. There being such a heavy demand for it, no plant can get enough, apparently, to injure it—hardly as much as it can use for a good purpose. But after the first of July, for instance, some of these plants seed and die, and commence decaying. Now it will be perceived, that all plants of this kind—and you are aware that there is a very heavy proportion of them—such as our wheat, rye, oats, and hay crops, and a thousand others, not only do not take their share of carbonic acid, and consequently those plants which grow till fall, have a larger proportion—but many of them commence rotting immediately, and add to the increased supply of carbonic acid which has been thrown upon the fall plants.

In former years, even this increased supply of carbonic acid after harvest, was not sufficient to disease the crop of potatoes, unless other circumstances, local in their nature, assisted it, but latterly, a supply of carbonic acid has been opened, that assisted the already great supply from the decay of dead plants. I refer to the increased consumption of stone coal. This, together with extensive manuring, appeared to have added so enormously to the supply of carbonic acid, that the plants, already strained to the utmost in the fall season, could not any longer resist the evil influence, and those most subjected to its virulence have given way to a power, which, while it should have exercised a beneficial influence, has, through the want of knowledge, proved a dreadful and destructive enemy.

The supply of carbonic acid, it appears, is not yet sufficiently heavy to exercise an unfavourable influence, until it is assisted by that arising from the decay of the early vegetation, or until all, or nearly all, of the causes of the formation of carbonic acid are acting together. That this will not always be the case, unless vigorous measures be taken, I am strongly inclined to believe. The large and increasing consumption of

stone coal is adding every year to the carbonic acid; and the time is not far distant when the potatoes will become diseased before the tops are fully developed, and other vegetation will suffer in like proportion. At present this supply has increased the growth of the early vegetables. During the early part of the past season, I noticed the extremely luxuriant appearance of the early vegetation. Every one noticed it, and it was the subject of general remark. Every thing of a vegetable nature grew as I never knew it to grow before, and plants which, in former years were rather small, last season grew to an enormous size. The hay crop was extremely large. This vegetation, when it came to decay, could not produce any other than an unfavourable effect. Its increased size must inevitably increase the supply of carbonic acid, and I mentioned at the time to my friends, that this extreme luxuriance boded ill to the potatoe crop, and that if the weather was not so extremely dry and cool as to cut short the crop by drought, the potatoe disease would be unusually severe. The result has been as I anticipated, and the potatoe crop has been very much shortened in consequence of the early attacks of the disease. It has shortened the crop by attacking the tops in some instances, and killing them almost as soon as the tubers began forming; so much has this been the case, that many farmers have no potatoes to dig—none having been formed. This is where the disease has been unusually severe.

But though the disease has attacked the crop later this year than it will do, in all probability, in future years, still it attacked the crop earlier this year than it did in 1842, as any one may see who will examine the Reports of the Commissioner of Patents. And the disease will go on attacking the crop earlier and earlier every year, until at last there can be no potatoes raised, unless a proper system of cultivation be adopted.

I have but the last two Reports of the Commissioner of Patents by me, and having no other source of information on this subject, I cannot tell how early in the season the disease commenced generally, during 1842 and 1843, but in 1844, I learn that it began in the latter part of August and the early part of September. This year, 1846, it began about a month earlier, as we have satisfactory accounts of its ravages as early as the latter part of July and the early part of August. Thus, I am inclined to believe, it will begin earlier and earlier every season, until the supply of carbonic acid from the consumption of stone coal, will be sufficient of itself, without waiting for the death

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The Cirencester work only, at nine £30. While attending at day morning on the farm, they will be must be re on the college authorities for their sponge on pain of forfeiting the fee. The see of the college is committed to the principal, who is responsible to the council for the orderly conduct of the students, and for the general well being of every department. A regular attendance of the daily prayers of the Church of England, and at the parish church on Sundays, is required; but the sons of dissenters may respectively attend such places of worship as their parents shall, by letter to the principal, request."

Among ourselves large sums are, in nearly all the States, expended in agricultural societies, and by some, experimental farms have been founded.

As the first imperfect means of awakening popular attention to improvements in cultivation, agricultural societies have no doubt done much. But they stimulate rather than instruct; for they seldom embrace a single member really skilled in cultivation as an art, and they do not teach, any further than by a few days' meeting in the year, and some practical examples of improved methods. But, besides, husbandry is fast becoming a science of no little extent and complexity; so that not grown men but boys must be the pupils, and a regular agricultural education given.

Public experimental farms have, we believe, been entire failures in every instance, except as jobs for individuals, or places where mere visionaries have been permitted to expose their incapacity at the public expense. Good, we fancy, they have done none. Indeed, they are a mere mistake, we suppose, unless as an appendage to the agricultural college; attached to which they serve as the chemical laboratory does to lectures on that science, or as the dissecting room to a course of anatomy and surgery. What lectures and demonstrations would be, each without the other, in these latter cases, an experimental farm is without a college, and a college without an experimental farm.

Next above these several means, as heretofore used among us, we must place agricultural journals; and these alone have no doubt done more to spread among us improvements in rural economy than all other things together. They have been to us the great creators of an art, upon the excellence of which depends public happiness—we might add, public morals—more than upon all other things whatever. But we must not be misunderstood by that narrow-minded sect who call themselves philosophers and free-traders;

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iculture cannot flourish, unless by an equal reas of all the other useful arts: and require *direct* national encouragement; it can receive little, in our present except *indirectly*, through them.

Even such journals are insufficient to eat and regular purpose of bringing a diffused skill in proper agriculture. Instructing only the grown, to instruct but slowly and imperfectly. Singular institutions are needed to give young, who are designed for husbandmen, a complete elementary education, in which tillage shall be the chief object to which all the other studies tend, just as much as arms are the main matter at West Point.

For this purpose, we see what they are doing in England: and now why is it that our great landed proprietors everywhere, and our planters in particular, do not see that it is time to consider whether they cannot raise up something of the same sort, and give at least a part of their sons an education proper to their safest destiny? Would there not be a thousand times more sense in this than in breeding them all up to law, or for politics, or in a very poor semi-literary style, that has no application to their future life, and can add nothing to its usefulness? —*National Intelligencer.*

From the Lancaster County Farmer.

Experiment with Lime on Corn.

In the spring of 1845, I ploughed up a small piece of meadow ground which lies on a hill side, gently sloping to the south. It is a thin soil, somewhat sandy; and was so poor that it had produced very little grass for several years. I planted it in potatoes, putting a small fork full of half rotted straw manure on each hill. The yield was at the rate of about 250 bushels per acre. Last spring I spread a small quantity of manure, say about three wagon loads to the acre, on the same ground, broke it up *deep*, and planted it in corn—putting about half a pint of slacked lime in each hill *before* the corn was covered. I was told that *so much lime* in the hill would “burn up the corn.” But it did not “burn up,” though it grew up very fast; and, although the season was very dry, it did not appear to suffer much from drought. I ploughed and hoed it twice only, ploughing deep the last time. And now for the yield: on measuring the product, I found it to be at the rate of ninety bushels of shelled corn to the acre; while another field, of much better soil, on which I put about the same quantity of manure *without any lime*, and which was planted

on the same day, only produced thirty bushels per acre. This small yield was thought to be owing to drought.

I state the above facts without further comment, only that I intend to try the experiment again this year.

ROBERT SEEVERS.

West Carlisle, O., Feb. 1847.

AGE OF PLANTS.—Some plants, such as the minute fungi termed mould, only live a few hours, or at most a few days,—Mosses for the most part, live only one season, as do the garden plants called annuals, which die of old age as soon as they ripen their seeds. Some again as the foxglove and the hollyhock, live for two years, occasionally prolonged to three, if their flowering be prevented. Trees again, planted in a suitable soil and situation, live for centuries. Thus the olive-tree may live three hundred years; the oak double that number; the chesnut is said to have lasted for nine hundred and fifty years; the dragon's-blood tree of Teneriffe, may be two thousand years old. When the wood of the interior ceases to afford room, by the closeness of its texture, for the passage of pulp or sap, or for the formation of new vessels, it dies, and by all its moisture passing off into the younger wood, the fibres shrink, and are ultimately reduced to dust. The centre of the tree thus becomes dead, while the outer portion continues to live, and in this way trees may exist for many years before they perish.—*Farmer and Mechanic.*

A CALIFORNIA FARMER.—A gentleman writing from California, to the editor of the St. Louis Reveille, says his stock consists of about 4000 head of oxen, 1700 horses and mules, 3000 sheep, and as many hogs. They all pasture themselves without difficulty in the rich prairies and bottoms of the Sacramento, and only require to be attended. This is to be done by Indians, of whom he employs 400. His annual crop of wheat is about 12,000 bushels, with barley, peas, beans, &c., in proportion.

KIND WORDS.—If the happiness of others is not motive enough for kind words, we may find a motive in their influence on ourselves. The habit of using them, will at length conform our feelings to our language. We shall become kind, not only in our speech, but in our manners and in our hearts. On the other hand, to make use of carping, harsh and bitter words, seldom fails to sour the disposition, and to injure the temper.

Annual Exhibition, New York.

THE New York State Agricultural Society will hold its Annual Exhibition at Saratoga Springs, on the 14th, 15th, and 16th of Ninth month next. Its premium list is certainly large and liberal, the amount exceeding, we believe, \$3000. We have seen no such list in this country. From many others in the long list of premiums, we select the following:

For the best cultivated farm of not less than fifty acres, exclusive of wood-land and waste-land, regard being had to the quantity and quality of produce, the manner and expense of cultivation, and the actual profits—they offer a

First premium of \$50.

Second premium, \$30.

Third premium, \$20.

The persons making application for these premiums, must submit written answers to the following questions:

To all who furnish full answers to these questions, premiums will be given consisting of single volumes of the Transactions of the State Society, or sets of these volumes, according to the value of such reports.

SOILS, &c.

1. Of how much land does your farm consist? and of how much wood, waste, and improved land respectively?

2. What is the nature of your soil and subsoil? Is there limestone in it? What rocks are found in it?

3. What do you consider the best mode of improving the different kinds of soil on your farm? Of clay soil, if you have it—of sandy soil, and of gravelly soil? Answer separately.

4. What depth do you plough? What effect has deep ploughing had on various soils?

5. Have you made any experiments to test the difference in a succeeding crop, between shallow, common, or deep ploughing?

6. Have you used the subsoil plough? and what have been its effects on different soils and crops?

MANURES.

7. How many loads of manure—30 bushels per load—do you usually apply per acre? How do you manage your manure? Is it kept under cover? or are there cellars under your barns or stables, for receiving it?

8. What are your means, and what your manner of making and collecting manure?

9. How many loads of manure do you manufacture annually? How many do you apply?

10. How is your manure applied; whether in its long or green state, or in compost? For what crops, or under what cir-

cumstances, do you prefer using it, either in a fresh or rotten state?

11. Could you not cheaply, essentially increase your supply of manure by a little extra labour?

12. Have you used lime, plaster, guano, salt, or any substance, not in common use as manure? In what manner were they used, and with what results?

TILLAGE CROPS.

13. How many acres of land do you till? and with what crops are they occupied, and how much for each crop?

14. What is the amount of seed planted or sown for each crop—the time of sowing—the mode of cultivating, and of harvesting—and the product per acre?

15. What kind and quantity of manure do you prefer for each, and at what times, and in what manner do you apply it?

16. How deep do you have manure covered in the earth, for different crops and different soils?

17. Have your potatoes been affected with any peculiar defect or disease, and have you been able to discover any clearly-proved cause for it, or found any remedy?

GRASS LANDS, &c.

18. What kind of grasses do you use? How much seed of clover, or the various kinds of grass do you sow to the acre? At what season of the year do you sow,—and what is the manner of seeding?

19. How many acres do you mow for hay, and what is the average product? At what stage do you cut grass, and what is your mode of making hay?

20. Is any of your mowing land unsuitable for the plough, and what is your mode of managing such land?

21. Have you practised irrigating or watering meadows or other lands, and with what effect? What is your particular mode of irrigation, and how is it performed?

22. Have you reclaimed any low, bog or peat lands? What was the mode pursued, the crops raised, and what the success?

DOMESTIC ANIMALS.

23. How many oxen, cows, young cattle, and horses do you keep, and of what breeds are they?

24. Have you made any experiments to show the relative value of different breeds of cattle or other animals for particular purposes, and with what results?

25. What do you consider the best and cheapest manner of wintering your cattle; as to feed, watering and shelter?

26. How much butter and cheese do you make annually, from what number of cows, and what is your mode of manufacture?

27. How many sheep do you keep? of what breed or breeds are they? How much do they yield per fleece, and what price does the wool bring? How many of your sheep usually produce lambs, and what number of lambs are annually reared? How much will your sheep or lambs sell for per head to the butcher?

28. What do you consider the best and cheapest manner of wintering your sheep as to food, watering and shelter? How many in proportion to your flock, if any, do you lose during the winter?

29. How many swine do you keep, of what breed are they, how do you feed them, at what age do you kill them, and what do they weigh when dressed?

30. What experiments have you made to show the relative value of potatoes, turnips, and other root crops, compared with Indian corn, or other grain, for feeding animals, either for fattening or for milk?

FRUIT.

31. What is the number of your apple trees? Are they of natural or grafted fruit? and chiefly of what varieties?

32. What number and kind of fruit trees, exclusive of apples, have you? and what are among the best of each kind?

33. What insects have attacked your trees, and what method do you use to prevent their attacks?

34. What is your general management of fruit trees?

35. What other experiments or farm operations have produced interesting or valuable results?

FENCES, BUILDINGS, &c.

36. What is the number, size, and general mode of construction of your farm buildings, and their uses?

37. What kinds of fences do you construct? What is the amount and length of each kind? And their cost and condition?

38. To what extent are your various farming operations guided by accurate weighing and measuring? And to what degree of minuteness are they registered by daily accounts?

39. Do you keep regular farm accounts? Can you state the annual expense in improving your farm, and the income from it, with such precision that you can at the end of the year, strike an accurate balance of the debt and credit? Would not this practice conduce very much to close observation, careful farming, and in the end, much

improve our system, as well as better our fortune?

We also find the following:—

Whereas, the Agricultural Society of the State of New York, has not an experimental farm; and whereas, to some extent, satisfactory experiments can be made by intelligent farmers on their own farms, therefore

Resolved, That the undermentioned list of premiums be offered to induce public spirited individuals, to lend their valuable aid in extending the boundaries of accurate rural knowledge.

Three premiums will be awarded of \$30, \$20, and \$10, in January, 1848, for the best experiment upon a herd of not less than eight cows, to determine the relative advantages of soiling, or depasturing milch cows. The experiment to be conducted as follows:

1st. The experiment must commence on the first day of May, and be continued until the first day of November.

2nd. The cows to be divided in two lots of four each. One lot to be soiled, the other depastured. Before commencing the experiment, each lot must be weighed and the record of the weight returned to the committee. It is necessary that the two lots shall be as near alike in weight and milking properties as possible.

3rd. The milk of each lot to be weighed separate daily.

4th. The manure made from those soiled to be ascertained in cords.

5th. An account to be kept of the expense of soiling, also detailed statement of the entire management, together with the measurement of the land occupied in soiling, and each to be returned to the committee.

6th. A description and measurement of the land occupied for pasture, also to be made.

7th. Each lot to be weighed at the conclusion of the experiment.

THE Agricultural Society of the State of New York is a broad concern. Its means are large—the sphere of its operations are large—and it is, as it professes to be, a *State* interest. We cannot imagine that it can fail to exert a powerful influence upon the agriculture of that noble State. Its movements must give an impetus that will be felt throughout her length and breadth, and which must widen still more, those giant strides which have made her population the most numerous of any State in the Union, and her prosperity equal to that of the most prosperous.—*Ed.*

A GREAT deal of ground will be planted in corn this spring. This is right: it is our staple crop. The demand must be large.

The Short-horns in America.

THE following history of the early introduction of *Short Horns* into this country, taken from *Allen's American Herd Book*, can hardly fail to be valuable to every one of our readers. Great national benefits often result, not only from small beginnings, and individual enterprise, but they not unfrequently are tardy in their consummation. The introduction of improved breeds of cattle and sheep, will entail a debt of gratitude to those who foresaw its advantages.—Ed.

WE are informed by Dr. Samuel D. Martin, of Colbyville, Kentucky, "As early as 1783, there were short-horn cattle imported into Virginia. Some animals of this importation were called the "milk breed," and some the "beef breed;" and in 1785, one of the Mr. Pattons brought to Kentucky a half-blood bull of the "beef breed." In 1797, old Mr. Patton brought to his residence in Clarke county, Kentucky, a bull and cow, directly descended from imported stock, of what was then called the "milk breed" of cattle; also some half-blooded cows of both the "milk" and "beef breeds." The "beef breed" were long-horned cattle,—large, coarse, and rough; coming slowly to maturity, and fattening badly, until fully grown, and were tolerable milkers. The "milk breed" were short-horned cattle, coming earlier to maturity, and fattening more kindly. Their milking qualities were extraordinary. It was not at all uncommon for cows of this breed to give 32 quarts of milk daily. Mr. Patton's short-horn bull was called Mars; his cow, Venus. The cow died, leaving only two calves, both bulls. The produce of Mars was spoken of by our old breeders in the highest terms, being superior, both for beef and milk.

"In 1803, Mr. Daniel Harrison, of Clarke county, Kentucky, purchased of Mr. Miller, of Virginia, a bull called Pluto, of the "milk breed." Messrs. Welton and Hutchcroft also brought to Kentucky a bull called Shaker, of the "milk breed." Capt. Wm. Smith also brought to Kentucky a very large bull called Buzzard, a mixture of the 'milk' and 'beef breed.' Messrs. Cunningham and Inskeep brought to Kentucky two bulls of this breed: in one the 'beef,' and in the other the 'milk breed' appeared to predominate. The descendants of all these cattle were called, in Kentucky, the 'Patton stock.'

According to this account, no pure short-horn blood descended beyond one generation, as the cow Venus died, leaving only bulls, of her produce. Doctor Martin continues:

"Stock of 1817. In this year, Mr. Lewis Sanders, a wealthy merchant of Lexington, Kentucky, sent an order to England for

twelve of the best cattle that could be purchased, for breeders. They were selected by Mr. Etches, of Liverpool, a capital judge of short-horns, who since assured Gen. Garrard, of Kentucky, that they were the best of their kind then to be had in England. Six of this importation were short-horns, or Teeswaters. The bulls looked very much like the picture of Mr. Coates' 'Patriot,' and the cows were generally fine milkers.

"In 1818, Mr. Prentice imported from England two bulls of the short-horn breed. These also have been spoken of as the stock of 1817, and are remarkably fine animals.

"The names of these importations stand thus:

Bulls.—Sam Martin, Tecumseh, Comet. **Cows.**—Mrs. Motte, The Teeswater Cow, The Durham Cow; imported by Mr. Sanders.

Bulls.—Prince Regent, and John Bull; imported by Mr. Prentice.

"These cattle were bred pure until other short-horns of later importations were introduced, which were extensively crossed upon their descendants."

Previous to the revolutionary war,—A. D. 1775,—a Mr. Heaton emigrated from England to New York, at which latter place he was for many years a butcher. In the year 1791, he went to England and obtained several short-horn cattle from George Culley, of Grindon, Northumberland. Afterwards, in 1796, he obtained from Charles Colling, a short-horn bull and a cow, all which he brought to his farm in Westchester county, New York, where he then resided.

Mr. Heaton bred these cattle some years in their purity; but after his death they were scattered, and there are many of their grade descendants now in Westchester county.

About the year 1815-16, Mr. Cox, an Englishman, imported from England a bull and two heifers—which were pure short-horns—and settled in Rensselaer county, New York. The heifers are said to have been remarkable for their milking qualities. Upon his death, or removal,—we are not certain which,—these cattle and their produce were purchased by Mr. Matthew Bullock, of Bethlehem, Albany county, who bred them many years. About the year 1822, Mr. Bullock, in connection with a Mr. Wayne, imported two short-horn bulls; one a light roan, called "Comet," or "Cornet," for he went by both names; the other a red, called "Nelson." These bulls were used alternately on the Cox stock, and from them descended the valuable tribe locally known as the "Bullock" stock, remarkable for their robust size and extraordinary milk-

ing qualities. In 1830, Mr. Bullock purchased "Copson," just imported by Mr. Smith, of Upper Canada, with which he again crossed his herd. These cattle have been widely distributed in the river counties of New York.

In the month of July, 1818, a yearling bull and heifer were imported into Boston, Massachusetts, by Mr. Cornelius Coolidge, a merchant of that city. They were bred by Mr. Mason, of Chilton, Durham, whose herd was justly celebrated for its high breeding and purity. The bull was called Cœlebs, and got by Jupiter (342); his dam by Wellington (679). The heifer was Flora, called by some Old Flora, and got by Lafon's bull, which was got by Comet (155). Flora's dam was also got by Comet, and gave 33 quarts of milk per day. Lafon's bull weighed, when two years and three months old, 1950 pounds. These particulars we gather from the papers of Mr. Coolidge, accompanying the importation, kindly copied for us by Mr. Sanford Howard, assistant editor of the Albany Cultivator.

In a letter accompanying the above, Mr. Howard remarks: "Cœlebs and Flora were sold to Col. Samuel Jaques, of Charlestown, in 1820, and remained his property until they died. While with him, Flora had fourteen calves, from 1819 to 1833—ten of which were by Cœlebs. One of these, a heifer, Europe, I afterwards owned. Most of her calves I knew, and they were excellent animals. I frequently saw both Cœlebs and Flora, while in the possession of Col. Jaques.* He was a large, deep-bodied, and heavy bull—red-roan in colour, and a fine handler: his live weight, in fair condition, about 2,400 lbs. Flora was chiefly red, with a few white spots; a fine cow, and a good milker."

We are indebted to Mr. Howard, also, for particulars touching other early importations.

"The late Gorham Parsons, Esq., of Brighton, Massachusetts, in 1818, imported a bull called "Fortunatus,"—afterwards "Holderness." He was bred by George Faulkner, Esq., of North Allerton, Yorkshire, England. He was warranted to be a

thorough-bred short horn, and bore all the characteristics of the race. His descendants, from both thorough-bred and native cows, were disseminated considerably through New England.

"In 1820, Theodore Lyman, Esq., of Boston, imported a short horn bull, which he afterwards sold to Israel Thorndike, Esq., who sent him to his farm in Maine.

"About the year 1825, Mark W. Peirce, of Portsmouth, New-Hampshire, imported a short horn bull called Nelson, and a cow called Symmetry, high-bred, and well-descended animals. This bull and cow produced some very superior stock. The noted ox Americus, which travelled as a show, and went to England for that purpose, was one of their progeny. He was, though enormously large, a beautiful animal. The "Great Bull Hercules," as he was called, which was also carried about for a show, was full brother to Americus. This was much the largest bull I ever saw, yet by no means coarse."

About the year 1818, Mr. Stephen Williams, of Northboro', Massachusetts, imported the bull Young Denton, (963) bred by Mr. J. Wetherell, in England. He was the sire of many very excellent Short Horns in Massachusetts, besides numerous grade animals, the heifers of which proved, in most instances, extraordinary milkers.

From the year 1820, several fine cows were imported into Boston, by gentlemen of that city and its vicinity, selected from the herds of Mr. John Wetherell, and other eminent breeders. Among those concerned, were Messrs. Williams, Lee, Derby, Prince, Munson, and others. Admiral Sir Isaac Coffin,* about the year 1823, presented to the Massachusetts Agricultural Society a bull and heifer, Admiral (1806) and Annabella, both bred by Mr. Wetherell. In connection with these fine animals, we regret to say, they were not properly appreciated by the farmers of Massachusetts; and their importers, mostly merchants in the city, or residing in the vicinity of Boston, who had introduced them more from a spirit of munificence toward their countrymen, than for their own individual benefit, could not pay particular attention to their breeding, and many of them were scattered and lost.

About the year 1828, Mr. Benjamin Rod-

* Cœlebs was the original sire of Col. Jaques' noted family of cows, which he styled "Cream pots" on account of the exceeding rich quality of their milk. He crossed them high up in the blood of Cœlebs. We saw them in 1837, some fifteen or twenty in number. They were remarkably nice cows, generally red in colour, and symmetrical in shape. Their milk, which we saw in pans, was remarkable for the thickness and weight of its cream. This quality, Col. J. assured us, was peculiar to the cows descended from Cœlebs.

* Admiral Coffin was an American, born in Nantucket. He went to England when a boy—joined the British navy before the American revolution, and remained there till his death, some years ago. He always kindly remembered the state of his birth, which he manifested by many handsome donations to his agriculture.

man, of New-Bedford, Massachusetts, imported three heifers, Adaliza, Dulcibella, and Galatea; and a bull, Devonshire, (966) bred by Mr. Whitaker, of Burley, Yorkshire, and selected by Mr. Francis Rotch, then in England.

In 1823 Mr. John S. Skinner, then editor of the American Farmer, Baltimore, Maryland, imported two heifers, Conquest and Pansy, and a bull, Washington (1566) for Gen. Stephen Van Rensselaer, of Albany, N. Y. These were bred by Mr. Champion, of Blyth. In the hands of Gen. Van Rensselaer they were bred many years, producing much excellent stock, and their descendants are now scattered through several different States. Previous to this, in the year 1821, Mr. Skinner imported from the herd of Mr. Champion, other Short Horns, which were afterwards purchased by Gov. Lloyd, of Maryland, who sent them to his estate on the eastern shore. These were a bull, "Champion" and two heifers, "White Rose" and "Shepherdess," from which several good animals descended.

During the years following 1822, up to 1830, Mr. Charles Henry Hall, of Harlem, N. Y., imported several fine Short Horns, some of which were descended from celebrated herds in England, and two of them were from the herd of Robert Colling. He also drew into his possession several Short Horns which were imported at an earlier date by other gentlemen of his neighbourhood. From these he bred largely, and their descendants were incorporated into many excellent herds. We have made efforts to obtain the correct pedigrees to the originals of Mr. Hall's stock, which was some years ago principally sold, and broken up: but some of the original papers were distributed with the cattle themselves; others have been mislaid; and of others still, but loose memorandums exist, giving only casual references to their blood. Some of these cattle were imported before the first English Herd Book was published. As an accurate judge of good animals, Mr. H. is rarely surpassed.

In 1824, Mr. John Hare Powell, of Philadelphia, commenced importations from the herd of Mr. Whittaker, and bred many years with great spirit and success. His importations were numerous for that day. He bred largely for some years, and his sales were frequent, and the prices obtained encouraging. Some of his cattle went into Kentucky and southern Ohio. His cow, Belina, as recorded in "Hints for American Husbandmen," in the month of May, 1827, on pasture, with Indian meal slop, at Powelton, near Philadelphia, gave 26 quarts of milk per day, from which the milk for three days

was churned, and yielded at the rate of 20½ pounds per week! The fact is thoroughly attested by several certificates of most respectable persons. This cow was imported in 1825, and descended from the stock of Robert Colling through his and Charles Colling's celebrated Red Rose, Wildair, and Dutches tribes of milkers.

Mr. Powell continued breeding to a moderate extent until about the year 1840, when he disposed of his principal herd.

We now arrive at the year 1834, up to which period the Short Horns had been steadily progressing, *earning* their way into the good opinions more or less of the people of the United States. But a moderate degree of spirit was manifested to push them forward by their breeders, generally, and they were known imperfectly, beyond the immediate locality of their homes. Their numbers, however, were considerable, and wherever bred, their reputation was fortified by their excellence, both in the dairy and at the shambles. This year, however, commenced a new era in their annals.

An association of breeders and graziers in the Scioto and Miami valleys of Ohio, dissatisfied with the slow progress of their native cattle, and their general deficiencies for the best markets—large herds of which were annually fed, and driven to the Atlantic states—resolved to introduce a better breed; and after several meetings and consultations, concluded to dispatch an agent to England for the purpose of making an importation from some of the best breeds of that country. The principal gentlemen composing that association were Governors Trimble and Vance, Messrs. Felix, George and William Renick, Thomas Huston, Michael L. Sullivant, and some others. Their agent, Mr. Felix Renick, proceeded early in the summer, to England, and in September returned with upwards of twenty Short Horns selected from the herds of Mr. Bates, the Duke of Leeds, the Earl of Carlisle, Mr. Whittaker, Mr. Paley, Mr. Mason, Mr. Ashcroft, and others.

This importation was received with much satisfaction by the proprietors, who commenced breeding them with great spirit. The following year another importation was made of about the same number; and the next season, still another importation of a smaller number was made by the same association. These were followed by several importations by gentlemen, among whom were Gen. Shelby and Henry Clay, Junior, of Kentucky, and by Mr. Neff, of Cincinnati, in 1838.

In 1837-8-9, Mr. Whittaker sent out upwards of one hundred animals on his own account, and upon orders forwarded from the

United States. His cattle were chiefly sold at public auction, at Powelton, near Philadelphia, the residence of Mr. Powel. During these years, Short Horns had become an object of great speculation, and many were sold in Kentucky and Ohio, at prices ranging from five hundred to one thousand dollars each! Several smaller importations were also made by individuals on their own account, and during the time from 1824 up to 1840, probably not less than three hundred Short Horns were brought into the United States.

Among the individual importations from 1836 to a late period, were those of several select and valuable animals from the most reputable herds in England, by Mr. E. P. Prentice, of Albany, Mr. George Vail, of Troy, Mr. James Lenox, and Mr. John F. Sheafe, of New York; Mr. Whitney, of New Haven, Connecticut, and sundry other ones not now recollected.

In 1835 a considerable number were brought out by Mr. Weddle, from Yorkshire, who settled near Rochester, N. Y. He bred these cattle for a few years, and from 1838 to 1841 disposed of his principal stock. Many of them were scattered through the Genesee country, and some of the choicest were sold to Gen. Dudley, and Mr. Harrison Blanton, of Kentucky.

The success which has thus far attended the breeding and rearing of Short Horns in the United States, is altogether satisfactory. Our climate, soils, and food, are highly favourable to their growth, and development. They are hardy to withstand our cold, and our heats, and with an abundant forage, even of the coarser kinds, they flourish. They are probably less cared for, and fed, than in England; yet no neat cattle pay better for their care and keep than these. They are, as a race, good milkers, remarkable in the richness of its quality, and the quantity is frequently surprising. For beef, they are unrivalled. Their capacity to accumulate flesh is enormous, and they feed with a kindliness and thrift never witnessed in our native breeds. In milk, instances have been frequent in which they have given 24 to 36 quarts a day, on grass pasture only, for weeks together; yielding 10 to 15 pounds of butter per week. Were it necessary we might produce many cases in proof. In beef, cows have slaughtered 1200, and 1400 pounds, neat weight, with extraordinary proof; and bullocks upwards of 2500 pounds. Still, few could be spared for such purposes.

Those who have bred them longest, like them best. And the deepest point of depression in their value having been reached, we trust that their future career is to be vigor-

ously onward and prosperous. Their full history in the United States, is yet to be written; and with this brief notice, we leave them to the good opinions and confidence of the enlightened friends of American agriculture. To say nothing of them as a creature of utility, every farmer of abundant means, which for this purpose need not be great, and every country gentleman, where properly situated, should cultivate Short Horns. With the increase of wealth and refinement in the United States, the quiet and elegant pleasures of country life are more appreciated. Numerous gentlemen of leisure annually retire from the bustle of city life, preferring the healthful and invigorating recreations of a farm to the exciting cares of the town. Many of this class become deeply interested in rural pursuits, and in a few years are known as eminently practical agriculturists. Among the most fascinating of their retired pleasures, is that of cultivating a taste for fine domestic animals. Among these, the Short Horns stand pre-eminent; and we can perform no more grateful service to ourselves, nor a more beneficial one to such individuals, than to suggest the breeding, rearing, and, if possible, the improvement of this superb class of cattle, as a prominent object of their labours.

For the Farmers' Cabinet.

Shade and Fruit Trees—Insects, &c.

MR. EDITOR,—I notice that the Philadelphia papers are discussing the propriety of cutting off the tops and otherwise mutilating the shade trees in the city, in order to avoid the disgusting insects that attack and infest them during the summer. It would give me pleasure to prevent such mutilation, as I greatly admire the beautiful shade trees of Philadelphia.

I am induced to believe that the reason why these insects attack and infest the trees, is that they find in the sap a sweet substance which is formed by a chemical action in the pores of the tree. This chemical action in this case is opposed to the vital action, and is a consequence of a determination of vital force. This loss of vital force is caused, in my opinion, by a surplus of carbonic acid. It is well known that sulphuric acid, properly added to starch, under favourable circumstances, changes it to sugar. I think that carbonic acid acts in a manner similar to the sulphuric acid, when it is added to vegetable fibre. Starch and vegetable fibre are composed of the same elements, carbon, oxygen, nitrogen, and hydrogen. The vegetable fibre has more nitrogen in it than starch has, and on that account is more easily changed;

this accounts for the carbonic acid being able to change the vegetable fibre, while starch remains unchanged, carbonic acid being less powerful than sulphuric acid.

In the sugar-cane, corn-stalk, sugar-maple, &c., the vital action *produces* sugar. Not so, however, in the linden and many other shade trees. In these, if sugar, or any other saccharine substance be produced, it is, as I have before said, by a chemical action, in this case in opposition to the vital action. This does not take place when the vital action is in full force. In the diseased plants, or plants whose vital force is deficient, the carbon, oxygen, nitrogen, and hydrogen, that are absorbed by the plant, and which should go to the formation of vegetable fibre and starch, are changed by the chemical action into a saccharine substance, or sugar. We have striking instances of this in the phenomena of honey-dew. With the sap full of sugar is it strange that the insects are attracted by a tree which offers them such a feast of sweet things?

The question, then, arises, How may the vital force be restored or prevented from suffering this deterioration? I answer, by neutralizing the carbonic acid, and thus deprive it of its power. This may be done by the application of alkalies or alkaline substances! There are a great many of these, and which can be had at a great many different prices. As I cannot mention them all in a communication like this, I will speak of perhaps but one of the cheapest of them, and its mode of application, as a guide to the use of all others. When the tree gets into full leaf, take the salt lye of the soap makers, and mix it with water in such strength as to enable the solution to bear an egg; then add fresh water equal in quantity to your solution. Apply with a long-haired whitewash brush to the larger limbs and the stem of the tree—wash them well, and then take a large syringe and throw the preparation on the leaves of the tree as high as you can. If circumstances will permit, it would be well to sprinkle the ground with the preparation above where it is supposed the roots of the tree may be—taking care not to put too much in one place, particularly near the foot of the tree.

I have recommended this mode of preparing, because the solution must not be too strong, as it might endanger the life of the tree. Indeed, if a tree be very valuable, great care should be exercised not to apply too much at one time, even of the preparation mentioned above. At intervals of every two weeks the operation might be repeated if the insects attack or still infest the tree. In the latter part of summer, if the season be such that much carbonic acid is

formed, it may be necessary to repeat the operation many times, particularly if, as just mentioned, the tree is very valuable, and you are afraid to apply too much at one time for fear of injuring it.

Strong soapuds is another valuable alkaline substance, and may be used pretty freely, care being taken not to use it too freely.

Fruit trees under like circumstances may be treated, in like manner, with great benefit.

In the hope that this article may be useful in preventing the mutilation and loss of the shade-trees, and in getting rid of the unsightly insects, I remain the public's humble servant.

CHEMICO.

Wilkesbarre, Pa., March 21, 1847.

For the Farmers' Cabinet.

Hydraulic Ram.

A NUMBER of articles having appeared in your journal on the Hydraulic Ram, (see vol. 9, p. 59; vol. 10, p. 228, 289, 297, and vol. 11, p. 217, 247, and 249,) and feeling interested in the subject, and being engaged in the manufacture of the ram, and having given its history some attention, I have thought that a few remarks upon the subject might prove interesting to your readers, who seem to be fully aware of the value of this simple and effective machine for raising water.

The first ram we have any account of, is noticed in a letter from the maker, John Whitehurst, to Dr. Franklin, dated March 16th, 1775. This machine was put up at Aulton, Cheshire, England, in 1772; but was not self-acting, as the one now in use.

The invention of the self-acting ram is due to Pierre François Montgolfier, a French paper maker, in 1796.

This machine was much like the one now in general use, extremely simple and effective. He patented several improvements on it in 1816, in England. First in employing two stop valves instead of one; (see cut, letter F, page 294.) Second, a snifting valve, to supply air as it became exhausted from the air-vessel, (c). Third, a particular form and arrangement of the air-vessel. Fourth, two plans for double acting rams, or such as are employed to raise pure, by a driving power of impure or foul water. Fifth, the addition of a suction pipe to raise water from a lower level than that of the ram; as from a shallow well. Sixth, an arrangement by which it is applied for blowing furnaces, &c., in place of the bellows.

In 1797 Matthew Bolton, (of the firm of Bolton and Watts,) of *Soho*, England, took out patents, first, for the self-acting ram; second, the addition of an air-vessel; third, a suction ram; fourth, a double ram, having one or two air-vessels; fifth, two syphon rams, one deli-

vering water at the top of the syphon, and the other at the end of the longer leg; (see p. 217 Cabinet); sixth, a weight to secure the opening of the valve (F); and, seventh, a spring for the same purpose.

He was also the inventor of rams to be propelled by distinct power.

A Mr. Haghette combined the ram with the syphon, to raise the water to a higher level than the top of the syphon; the water being delivered from the top.

In 1845 two patents were taken out in the United States for improvements on the ram. One by B. S. Benson, of Baltimore, for a double acting ram, used for raising pure by means of impure water; a peculiar form of stop valve; a spring to insure the opening of the same, and an arrangement to stop the ram when the supply of water fails, and start it again when it is sufficient.

The other, by Erastus W. Ellsworth, of East Windsor, Connecticut, for a syphon ram, which, from the specification, I judge to be much, if not exactly, like the one patented by Bolton in 1797.

Applications have also been made by a gentleman in Chester County, Pa., for a double acting ram.

The above gives a condensed view of the principal improvements which have from time to time been suggested upon the ram.

After a careful investigation of all the plans which have come to my notice, and from numerous experiments, I have come to the conclusion, that the most simple form of ram is preferable in every respect. The parts which need repair should be easily reached; those which need replacing should be as simple and cheap as possible to be good. The size of the machine should be accurately proportioned to the circumstances of the situation.

The driving pipe (B) should be of a proportionate size and length. The length should not be governed by the diameter, as the article on page 248 of the Cabinet asserts; but by all the attending circumstances: the head or fall, the elevation to be raised, and the supply from the spring or brook.

In all cases where a ram is properly made and put up, the following rule will apply to determine the amount of water which can be furnished.

Measure the amount the spring or brook discharges in a given time. Ascertain the greatest amount of head or fall that can be obtained, and the elevation to which the water is to be raised. Then divide the elevation by the head or fall, and the amount of water by the quotient. Deduct 30 per cent. from this result, and it will give the amount delivered in the given time.

For example, suppose an elevation of 60 feet, with a fall of 5 feet. The supply, 4 gallons per minute, or 5760 gallons per day.

Then $\frac{60}{5} = 12$; then $\frac{5760}{12} = 480$: and 480

— 30 per cent. = 336 gallons raised per day.

This rule can be depended upon when the ram is properly made and put up. But every defect, either in proportion or mechanism, causes an additional deduction from the amount raised. A small allowance must be made for distance. Rams well constructed will raise water 30 times the fall, and will generally operate for months without any attention. The repairs are simple and easily effected by any person, being less difficult than those of the ordinary house pump. The cost of a ram, put up and ready for operation, is generally less than that of a pump and well, in the same situation.

H. P. M. BIRKINBINE.

Philadelphia, March 27th, 1847.

For the Farmers' Cabinet.

Bread Stuffs.

I take from one of our Philadelphia papers, though I am unable to designate it, the following statement of the business carried on here in bread stuffs. The sales of flour, corn meal, wheat, and corn, during the week commencing 26th of first month, and ending the 1st of second month, both inclusive, are stated to be as follow:

"FLOUR—The sales for export including some lots taken on speculation, amounted to 47,500 barrels at \$5 62½ to \$6 25 per barrel; and extra at \$6 50, averaging \$6	\$285,000
CORN MEAL—Sales of 34,000 barrels for export at \$3 75 to \$4 75, part for future delivery, averaging \$4 44	150,940
WHEAT—Sales of 32,000 bushels Penna. White at \$1 35 to \$1 40, and 30,000 do. red at \$1 15 to \$1 35,	82,000
CORN—Sales of 65,000 bushels Penna. yellow, at 80 to 98 cts., and 10,000 do. Southern White at 87½ cts., averaging 90 cts.,	54,000
Total,	\$571,940

Here then we have upwards of five hundred and seventy thousand dollars as the result of one week's transactions in breadstuffs, which is an unusually large amount. When the great Pennsylvania Railroad is completed, connecting our city with St. Louis by an iron band, in operation at all periods of

the year," what may we anticipate as the limit of our operations in this way? With a territory undefined in its extent, a soil as varied as our climate, and consequently an adaptation of both soil and climate to productions of every article of necessity or luxury, it appears to the writer, that we may hope for generations to come, to have our granaries looked to as Europe's great resort with her dense population, in time of need. There is but little danger at present, of our falling into Ireland's deep, radical error—we mean that of having comparatively, but one crop. While we have such a redundancy of land, and that adapted to every variety of produce, we shall endeavour to secure plenty, by keeping up that variety. A goal of unexampled prosperity would seem to be before us: yet should we always bear in mind, that as our rye crop was stricken in 1836, and as Ireland's distresses show that her *staff* is now blighted, not one only, but a dozen of the staples of this favoured land may be arrested by the frost, the blight, or the worm. While we have abundance, is it not delightful to witness in every section, the opening of our very country's heart, to the appeals of foreign distress, and the cheerfulness with which we yield to those appeals, a part of that, whose value is greatly enhanced by the increased demand occasioned by this very distress. Those who are able to give, enjoy a privilege of great value.

C.

Philadelphia, Third month, 29th.

Propagating the Vine.

We have regarded Hoare's Practical Treatise on the Cultivation of the Vine, as among the best. In looking over it a few days since, we were amused with the following fanciful plan, which we insert for the benefit of such as have not the book, and yet may be inclined to try it.—Eo.

We will describe a mode of cultivating the vine, which, from its simplicity and economy, and its easy practical adoption, recommends itself most especially to the notice of a vast class of persons who are not in possession of the means to practice any of the usual methods of culture.

This mode of culture is based upon two important principles connected with the growth of the vine. The *first* of which is, that a body of substances or materials, of the nature already described, being enclosed in a hollow brickwork or masonry erected on the surface of the ground, will nourish and support the roots of a vine inserted therein, as effectually as it would do, were the brickwork or masonry enclosing the materials, placed *below* the surface of the ground. The *second* principle is, that the roots of a vine, when enclosed in this manner, and supplied

with the requisite degree of moisture, will strike *upwards*, and grow as freely in that direction, as they will *downwards* or horizontally, when the brickwork and materials are *beneath* the surface of the earth.

On these two important principles, an easy and novel mode of cultivating vines may be practised, which may be described as that of building hollow brick erections on the surface of the ground, of any shape, circular, square, or otherwise, and filling them with dry materials of the description already mentioned, then planting in each erection amongst these materials, the roots of a vine, and training the branches of it on the outside surface of the brickwork.

These are the principal features of this method, which, perhaps, will be more clearly understood from a detailed account of the mode of putting up an erection of this description, and planting a vine inside of it.

For this purpose, a hollow circular column five feet high and three feet in diameter, may be chosen. A circular erection is the best, because the sun will shine all round it throughout the growing season, and also because the shoots of a vine can be trained so much more easily round a circular column than round one of any other description, having corners or angles to it.

It must first be observed, that, as the soil or ground on which erections of this description can be put, will have no connection whatever with the roots of the vines that are to be enclosed within them, proper and convenient sites may be chosen wholly irrespective of the nature of the soil on which the erections are to be built. Any situation therefore will do, provided it be sheltered, and have an open exposure or aspect facing the course of the sun.

Assuming, then, that a proper site has been chosen for the erection of a column of the above-mentioned description, the following directions in building it are to be observed:—

1st. Lay a course of bricks on the ground in the form of a square, the sides of which shall measure four feet. This is to form the base of the column, and is intended to give it an architectural feature. Now, if the site be near any building or wall, or straight path, then the sides of this base must be at right angles with that building, or wall, &c.; but if none of these exist, then the base must be laid with its corners pointing to the four cardinal points of the horizon. The joints of the brickwork are to be filled in with cement or strong mortar, so as to prevent the roots of the vine from penetrating through into the soil beneath.

2nd. The base of the column being laid, the circle for the brickwork of it must then

be accurately marked out; after which, the first course of bricks is to be laid flatwise, so that their inner ends may point to the centre of the circle, and their outer ones form the periphery of it. Half bricks will be sufficiently strong, provided that at four equally distant parts of the circle, in every course, a whole brick be laid, which will strengthen the work and make it firm. Half bricks, while the cost of them is much less, will not require so much cutting as whole ones, and they will also leave a greater space inside of the column for the reception of the materials. The first circular course being laid, the interior is to remain as it is, hollow.

3rd. Now mark the exact spot in this course where the shoot of the vine is to go through the brickwork, and this should be opposite the centre of one of the sides of the base, that faces either the south or east or any intermediate point. This spot being marked, the second course of bricks is to be laid as before, observing that, as the shoot of the vine is to go through here, a semicircular hole is to be made in the upper surface of the brickwork, of an inch and a half in diameter, to form a passage for the shoot. The second course being laid, a sufficient quantity of materials to fill the column, of the description already mentioned,* having been previously provided and properly prepared, the hollow space is now to be filled with them as high as the

surface of the brickwork. They must be put in by the hand, and placed closely and compactly together.

4th. Now plant the vine, observing the directions respecting the roots given in p. 175, which are to be strictly followed. The vine should be a strong plant three years old. It is to be laid on its side, with its roots inside of the column, and its shoot passing through the semicircular hole to the outside of it. That part of the shoot that lies in the hole is to have all its buds cut out, leaving as much of the shoot outside of the column as contains three good buds.

5th. The vine being thus planted, the third course of bricks may be laid, taking care that a brick with a semicircular hole, exactly the same size of the other, is laid over the brick on which the shoot of the vine is resting, and which will then be lying in a *circu-*lar hole, an inch and a half in diameter. The third course being laid, the internal vacancy must be again filled up with more materials, taking particular care to place them close round the inner end of the hole containing the shoot of the vine, so as to prevent the entrance of mice or any other unwelcome intruders. The hole on the outside, also, should be filled with moss, which will give it a more sightly appearance than if left open, and likewise protect the roots during their first growth.

6th. The remaining courses of brickwork may now be laid in succession, and the materials filled in as the work proceeds. When the column is built up within three courses of its intended height, and the materials filled in exactly even with the brickwork, a course of whole bricks must be laid over the *entire surface*, taking care that those which rest on the materials are not to be laid on mortar, but merely jointed with it. This course being finished, the last two are to be formed with whole bricks laid flush with the outside, and with their inner ends slightly sloping towards the centre of the column, which will cause all the rain that falls on them to run towards it, and fall into the sunken hollow space that will be there formed by this circular ring of brickwork. The circular space, which will be about 18 inches in diameter, and 6 inches deep, is intended as a receptacle for all the rain that falls on the surface of the top of the column, which will filter through the single thickness of the bricks, forming the bottom of the hollow space, and thence be distributed by absorption throughout the whole mass of the enclosed materials, thereby supplying that moderate degree of moisture to the roots of the vine, which contributes so advantageously to its nourishment and support.

* The best description of materials for the intended purpose can be easily procured, at any time, and almost in any place. These are, *broken bricks, lumps of mortar, charcoal, and bones*. The three first should be reduced to the size of a hen's egg, or thereabouts. Larger or smaller fragments will do, but when they are about this size they are better calculated to retain the requisite degree of moisture, in connection with the greatest possible extent of surface. The bricks should not be too hard burnt, because their porosity is thereby lessened. Old mortar should be preferred to new, when it can be procured. The bones may either be broken into fragments, or deposited whole, and the fresher they are the better. Any description of bones will do, provided they are those of animals arrived at maturity, and are, therefore, of a solid and lasting nature. Such as have marrow in them should be broken asunder, that the interior surface may be available to the roots of the vines; and the lighter and more porous the charcoal is, the better will it answer the intended purpose. The whole of these materials should be used in equal proportion, measure for measure, and should be well mixed together. But before this is done, the bricks, mortar, and charcoal should be well soaked in urine, and then used immediately. And as these substances convey to the roots of vines an extraordinary supply of nutriment, in a highly concentrated form, a small quantity in bulk, in proportion to that of common soil, will be amply sufficient to support a single vine for a long series of years.

The column will now be complete. The sunken space at the top of it may, if desired, be filled with mould; and mignonnette, or any other annual flower of suitable growth, may be grown in it, and which, hanging pendently over the edge of the column, will present a very graceful appearance.

The pruning and training of the shoots of the vine will be the same as if planted against a straight wall. The circular surface of a column of these dimensions will contain 45 superficial feet; a few years therefore after its erection, the vine will annually yield 50lb. weight of grapes. The whole cost of erecting one, including the enclosed materials, will be about 25s.

Columns may be erected of a larger or smaller size than that here described; but if the diameter be much less than three feet, the shape must be that of a polygon of many sides, if built with bricks, of the usual shape, on account of their ends being rectangular.

HORSE POWER.—We are frequently asked the question, what is understood by a *horse power*? and why that way of reckoning power came to be adopted, and brought into general use?

Before the power of steam was generally known and applied to mechanical purposes, horses were used to raise coal and other heavy bodies, and Mr. Motts, in his experiments, carefully compared the relative power of the different breeds of horses, and found its average equal to raising 33,000 pounds one foot per minute, or what is equivalent, to raise 330 pounds 100 feet, or 100 pounds 330 feet during that space of time, when attached to a lever or sweep of a given length. Thus, this afterwards became the standard of measuring power or force applied to mechanical purposes, and which is still retained in common use.—*Farmer & Mechanic*.

Singular Habits of Swallows.

House martens have a singular practice throughout the breeding season, and more particularly towards the latter part of it, of flying up against the walls of buildings, just below the eaves, and daubing them with mud apparently without any intention of constructing a nest. Perhaps they do not go twice to the same spot: at any rate, these patches of dirt are not applied with any regularity, but may be seen sticking to the brick-work, at intervals of two or more inches all along the front of the building. Just at the present time my own house has a line of these mud patches carried round nearly three sides of it. I fancy I notice, that the birds are more inclined to this sort of proceeding in some states of weather than others. Occasionally, twenty or thirty martens will be

engaged in this manner from morning till night, when, perhaps, for several days before and after, not one is to be noticed. A damp, cloudy day, especially if also warm, seems to call them most to this employment, during which they appear actuated by some feeling or excitement which it is difficult to explain. It is surely something more than an instance of their "caprice in fixing on a nesting place," (alluded to by White,) which induces them to "begin many edifices, and leave them unfinished." In the present instance I suspect they may be the first broods but lately fledged, whose instinct begins to operate and show itself in this manner before it is wanted. We see something analogous to this in the behaviour of caged birds, who seem to experience a pleasurable sensation in carrying about in their bills, at the proper season for building, any little pieces of thread, straw, or other materials which happen to be within their reach, even when they have no mate, and no convenience for making a regular nest. This is evidently an instinctive action, increased, perhaps, by high and stimulating food.—*Jenyns' Observ. in Nat. Hist.*

For the Farmers' Cabinet.

Fossil Corn.

TO THE EDITOR,—Morris Longstreth having incidentally called up the subject of "fossil corn" in his *Agricultural Address*, published in the last Cabinet, (see page 223), without helping his readers out of what many of them have felt to be somewhat of a geological dilemma, I must ask the privilege to do so.

Those who possess the second volume of the *Farmers' Cabinet* will find a notice of the same *fossil corn* at page 139. As many of the present readers of that useful paper do not find access to the early volumes of the work, I will quote a short passage therefrom.

"In the 2nd part of the first volume of the *Transactions of the Geological Society of Pennsylvania*, page 145, is a letter from J. C. Johnson, M. D., of Louisville, Kentucky, to R. Harlan, M. D., of Philadelphia, dated the 6th of July, wherein the writer says:—'I send you by Mr. Frazer, the FOSSILIZED CORN, of which I spoke when I first saw you. It is found in the alluvial bank of the Ohio river, about twenty miles below Wheeling, both above and below the mouth of Fish Creek, and extending up the creek some distance, and four or five miles on the Ohio; it may extend farther, but shows itself only that distance by the washing of the river against the bank.'

"The stratum is generally from eight to ten inches thick, and from five to six feet below the surface, and contains nothing but the corn grains closely impacted together with the black dust, which you perceive

among the corn, has ever been found with the grains. The same stratum has been met with in places distant from this in digging below the surface. This is all that I could learn relative to this interesting and unaccountable disposition. Why, or how did it get from the cob?

"It certainly must have been charred, or it would not have been thus preserved. It could not have been reduced to this black cinder, like the loaves of bread and grains of different kinds found at Pompeii; or rather it could not have resulted from a like cause. I do believe, that if all the corn raised on the Ohio, and all its tributaries, above this point was collected in one mass, it would not amount to one-tenth of this deposition."

It would seem that there is a little "poetry" in some of the foregoing statements; and I am not aware that the public has ever been undeceived by any correction of the accounts first published. With this view I am induced to send for publication the following extract from a letter which I received from a friend residing not very distant from the spot, in reply to some inquiries which I had addressed to him in relation to the *fossil corn*.

"I had not before heard of Dr. Johnson's 'fossil formation' on the Ohio River. In 11th month, 1839, I repaired to the spot, but found no other curiosity than an old battleground. In several places, extending from Grave Creek to some distance below Fish Creek, about ten or twelve miles, magazines of corn have been burned, and the freshets in the river overflowing the banks, have washed it along and covered it at different depths from six inches to two feet or more. It was once very plenty, but is now only to be found thinly scattered in the alluvion—the earth where it is found generally having the appearance of having been burned, as it also has in some places where the corn is not found. Fish Creek is about two miles below Baker's Station, one of the oldest military posts on the Ohio River. Whether the corn belonged to the whites or Indians we cannot now conjecture, there being no other vestige of Baker's Station left, except the grave yard. Below the creek people have dug and ploughed up many pieces of gun-barrels, gun-locks, iron axes without any steel on them, &c. It is well known that they are not of older date than the emigration of the white people to the banks of the Ohio, for the Indians never wrought iron into any kind of tool. This I feel confident in asserting as far as relates to those of the great valley of the Mississippi, having in my younger days been among five or six nations or tribes of them." Respectfully,

E. MICHENER.

Sylvania, 3rd month, 1847.

LAMBS BORN DEAD.—"A YOUNG FARMER," of Genesee, informs us that he had in the winter of 1845—6, 200 ewes, which had been selected for the purpose of raising lambs. "About the 20th of March," he says, "they commenced dropping their lambs perfectly dead, it being one month before their time. They continued in this manner until the 20th of April, the proper time for the lambs, when I found that I had lost 100. All that came after that time were alive and apparently healthy. The sheep were fed nothing but *plenty* of good hay, and were well littered with wheat straw the fore part of the winter, and oat straw the latter part." Can any one give the reason for the abortion?—*Cultivator*.

Dried Strawberries.

Last summer, by way of experiment, when strawberries were plentiful, I attached threads to their stalks, and hung up a few which were over-ripe, to dry. I placed them inside a window facing the south, where they remained from June last to the present time, (March 23.) They have just been tasted, and the result is most satisfactory. That sweet refreshing acid which is peculiar to the strawberry in full perfection, the flavour of the fruit without any watery taste, is delicious; it dissolves in the mouth as slowly as a lozenge, and it is infinitely superior to the raisin, which so soon brings on a feeling of satiety. The strawberry thus dried is a stomachic. The experiment may be tried when the fruit is so ripe as to be scarcely worth gathering, without any further expense or trouble than being hung up.—*London Paper*.

From the Ohio Cultivator.

A LOT OF LARGE HOGS.—I had raised and fatted the past season on my farm, (by Nehemiah Gaskill,) a lot of 22 hogs, the weight of which we deem somewhat extraordinary. They were a cross of the Berkshire and Russia breeds; were slaughtered when only 19 months old, by Mr. Bimm, of Dayton, and the following is the record of the weight of each; 528, 521, 514, 506, 505, 504, 486, 478, 420, 446, 455, 430, 457, 415, 468, 480, 457, 430, 447, 432, 406, 435—total, 10,222.

If any of your subscribers have beaten us raising pork, we should like to hear from them.

RICHARD HAINES.

Centreville, Montgomery co., March 10, 1847.

A drop or two of honey well rubbed on the hands while wet, after washing with soap, prevents chapping, and removes the roughness of the skin; it is particularly pleasant for children's hands and faces in cold weather.

How to Raise the best Gooseberries.

Six—I hear almost every body complain of the difficulty of raising fine gooseberries. The bushes, to be sure, grow easily enough. It is not difficult to get from the nurseries the prime English sorts—sorts with large and high flavoured fruit, really worth growing. But there seems to be something wrong in our warm and dry climate, that is utter ruin to the fruit. A sort of *scurf* or *mildew* settles on the berries as soon as they are about a quarter grown, and destroys the whole crop. Once attacked by this pest, the berries are past cure, and quite worthless.

Now I have been very lucky in my gooseberry growing, and it has struck me that a few words about my way of doing the thing might help some unfortunate being, fond of gooseberries, but who does not know how to raise them.

I plant my gooseberry trees in a long border on the north side of a paling fence. Before planting them, I trench the border two feet deep, as I know that the roots of the gooseberry love plenty of moisture all summer, which they can never get in the soil, unless it is made deeper than common, by trenching it well. For manure, I give it a heavy dressing of common stable manure, when the trenching is going forward.

I then put out my gooseberry plants early in the spring, or early in the fall, as may be most convenient to me. I have not found that the season makes much difference. I plant them about four feet apart every way, and always keep them trimmed to clean single stems like small trees.

There are hundreds of sorts of "prize gooseberries" raised in Lancashire, but they are not all suited to this climate. I have tried a great many, and have settled down upon *two*, which, taking all in all, I think not surpassed by any others for this climate. These are the *Crown Bob*, a grand old red gooseberry of excellent size, always bears good crops and possesses a high flavour; and the *White Smith*, quite as good among the whites, as *Crown Bob* is among the reds. There are no doubt many others, very good ones, in the catalogues, but there are none better, and as there is not much variety in gooseberry flavour, I am quite content with these two prime sorts, that will satisfy any body, however fastidious.

I prune my gooseberries among the very first bits of garden work done in the opening of spring. I usually cut out about one-third of the wood made the previous summer. As soon after that as the ground is in working order, I give the border where they grow the dressing for the season, after this fashion. I first provide myself with a couple of barrels

of *soot*, as this is my favourite manure for this shrub. It is easily enough collected during the winter, with the help of a chimney-sweeper in my neighbourhood, and I suppose every housekeeper might save enough for the gooseberries in his own garden, if he is not so large a gooseberry grower as myself, out of the sweepings of the chimneys and stove pipes about his own premises.

The gooseberry border is first nicely dug over. I then scatter a light dressing of the soot over the whole surface, and under the bushes, at the rate of a quart to each gooseberry bush. This gives them plenty of stimulus for the season's growth, for soot is a very powerful manure, and no plant likes richer soil than the gooseberry.

Next comes my remedy against the mildew. This is neither more nor less than *salt hay* (i. e. hay from the salt marshes).* As soon as I have made the top dressing of soot, I cover the *whole surface* of my gooseberry border with salt hay to the depth of three inches. This keeps the soil always moist and cool, not merely by covering the ground with the hay so that it shall not be made dry by the sun, but because the salt in the hay always attracts moisture from the air, and gives it out to the bushes. This prevents the sudden changes from hot to dry, which always almost immediately cause mildew. I have tried it now six years, and have never had a blighted berry from the first, though in the same soil, and with these very sorts, I had bother enough with this troublesome thing before.

My crops are regular and large. They may not equal the prize sorts of the Lancashire weavers, who put a saucer of water under their show berries to make great drop-sical monsters of them, but I will answer for it, they are higher flavoured.—*Downing's Horticulturist*.

Horse Market in Dumfries.

The number of animals offered on Tuesday was below an average; but the quality in general was good; the greater part being in the hands of dealers, who for some time past, have been through the surrounding districts, picking up whatever they could find, whether to supply our railways, or an impression that our rural labour is rather behind. The demand was remarkably brisk, and sales were easily made at prices perhaps higher than were ever before obtained in our market; good draught colts from 4 to 6 years old, may be quoted generally from about £45

* We suppose in districts of country where salt hay is not produced, a substitute might be found in any coarse common hay soaked in brine.

to £55, and in several instances, £60, or perhaps fully £60 was obtained. Good mares were also much in demand, and can scarcely be quoted lower, according to quality, than the best order of colts. Young colts and mares rising from 2 to 3 years, were equally in demand and brought from £30 to £40; roadsters and harness horses were not numerous offered, but were high in proportion; few ponies were offered; on Wednesday the features of the market were not materially different from those of Tuesday. The show was again rather below an average, but the demand was fully as good, and prices perhaps a shade higher. Secondary animals were according to quality high in price. As one feature we may notice, that Mr. Cumming, a dealer from Glasgow, had fully 100 animals, purchased recently either in the surrounding districts, or picked up in our market on Tuesday, which may be estimated, taking one with another, at no less than £50. Out of that stock he made a number of sales to railway contractors and others.—*Kelso Mail.*

The Dix Pear.—A Profitable Tree.

A neighbour of ours, who resides but a few rods from us, and in whose garden stands the Dix pear, has recently harvested the crop. After the high winds of autumn, and more particularly the gale of the 13th of September, he gathered, about the first of November, *two barrels of pears*. These were intended for his own use; but a dealer, who had seen the pears upon the tree, and knew something of their value, made him the tempting offer of *fourteen dollars* for one barrel. Having so large a quantity, he reluctantly consented to let them go. Some weeks subsequent to this, in conversation with the person who purchased them, he inquired how much he gained by his purchase; he stated that he had sold *twenty-five dozen at five shillings per dozen*, and *eight dozen at about seventy-five cents per dozen*, the latter being of the smallest size, the barrel netting upwards of *twenty three dollars*; the whole having been sold to retail dealers in Boston, *to sell again*. Thus the *two barrels*, had they both been sold, would have brought the very great sum of *\$46*. The tree was not so full, nor the pears so large and handsome, as in 1845, when our drawing was made. It will be difficult to find a more profitable tree.—*Mag. of Horticulture.*

GREASING CARRIAGE WHEELS.—The best composition that can be prepared, to relieve carriage wheels and machinery from friction,

is composed of hog's lard, wheat flour, and black lead (plumbago.) The lard is to be melted over a gentle fire, and the other ingredients—equal weight—may be added, till the composition is brought to a consistency of common paste, without raising the heat near the boiling point. One trial of this paste will satisfy any one of its superior utility.—*Exchange paper.*

The Duke of Devonshire's Conservatory.

Of this grand conservatory no better idea can be given than by telling you that it is a glass structure which covers an acre of ground—and that the carriage road is continued directly through it, so that the duke and his guests can drive through with a coach and four! The whole building is heated by hot water, the pipes to convey which measure miles.—The temperature of various climates is imitated, and the collection of trees and plants embraces all that is fairest and loveliest in the vegetable world. Here is a whole avenue of bananas and plantains, lining one of the grand walks, and among them the *Musa Cavendishii*, full of flowers, and laden with heavy masses of fruit. There, in an appropriate climate, is a charming grove of oranges and lemons. In an *aquarium* or pond of water are the lilies, and other aquatic plants of the tropics. And near by is a wild mass of rock work, of Derbyshire spar—looking like a rich bank by a forest stream, where rare exotic ferns, lichens and air plants enjoy something as near as possible to their natural homes.

Over this hill of rock work, is conducted a flight of steps; this leads you to a light gallery carried quite around the conservatory, whence, as you imagine, the eye of the spectator revels in the strangeness and novelty of the masses of oriental vegetation, not plants half starved and dwarfed in pots, but trees nearly full grown, and luxuriant with their roots in the warm soil—palms, dates, and bananas, developing almost all their native grandeur and oriental wildness!

DOWNING says the Plum is naturally a marine tree, and it is surprising how much salt it will assimilate and thrive upon. We have, ourselves, given a single large tree a half bushel of salt in a season, applied to the surface of the ground in the spring, over an area as wide as the extent of the branches. The tree was in a sickly and enfeebled state, and it had the effect of restoring it to a healthy and luxuriant condition. But we consider this an extreme case, and should not recommend the abundant use of salt every year.

How to Raise the best Gooseberries.

STR—I hear almost every body complain of the difficulty of raising fine gooseberries. The bushes, to be sure, grow easily enough. It is not difficult to get from the nurseries the prime English sorts—sorts with large and high flavoured fruit, really worth growing. But there seems to be something wrong in our warm and dry climate, that is utter ruin to the fruit. A sort of *scurf* or *mildew* settles on the berries as soon as they are about a quarter grown, and destroys the whole crop. Once attacked by this pest berries are past cure, and quite worthless.

Now I have been very lucky in berry growing, and it has struck me a few words about my way of doing it might help some unfortunate gooseberries, but who do not know how to raise them.

I plant my gooseberries on the north side of a wall, and fore planting them I dig the soil to the feet deep, and mix it with a good quantity of gooseberry manure, which I have collected from the garden, and which I have found to be very good for the purpose. I then tread the soil down, and cover it with a thin layer of sand, and then I sow the seeds. The seeds are very small, and very much in different shapes, and very much in different sizes. I have seen them under the microscope each grain surrounded by a thin membrane, and the whole covered by a thin layer of sand. The seeds are very small, and very much in different shapes, and very much in different sizes. I have seen them under the microscope each grain surrounded by a thin membrane, and the whole covered by a thin layer of sand. The seeds are very small, and very much in different shapes, and very much in different sizes. I have seen them under the microscope each grain surrounded by a thin membrane, and the whole covered by a thin layer of sand.

On its remains entire, and can be kept perfect for days and weeks. The pistil is a stiff protuberance in the very centre of the flower—it bursts with great force. When flowers are designed to be operated upon, the one intended to produce the seed should be deprived of its anthers early in the morning, which can readily be done with a pair of fine scissors; then during the day, or within two days, take a fine camel hair pencil, and obtain, about noon, the pollen or dust from the plant or plants with which you intend to make the cross, and apply this dust to the pistil of the roses from which you have previously extracted the anthers. It will require some practice before proficiency can be attained in the operation, but a little attention will insure some success. The organs are fit for the operation when the pistil has a glutinous appearance on its summit, and the pollen is dry and powdery. The flowers may be one or two days old; rain is fatal to the operation—dry weather, therefore, must be chosen. Patience and assiduity can accomplish wonders in this department of rose culture; the persevering efforts of the French cultivators have been so very successful within the last ten years, that we do not at all despair of seeing a yellow Moss, a yellow Provins Rose, or even striped roses, combining every shade from white to black, and there is no reason why there should not be produced a perpetual blooming climbing Moss Rose, of any colour at present known in the family of the

of soot, as this is my first, and no idea of a this shrub. It is called a yellow as Harri during the winter. La Noisette Lamarque; ney-sweeper in , or the Cloth of Gold, is suppose ever laps ere this work is through enough for plants in my possession will be den, if he o prove or disprove the assertion. as my seeds will be ripe about the first of ney mber, and can be retained in the cap or fruit till the time of sowing, taking the precaution to bury them in sand, where they will be safe from the depredations of mice, who are very fond of them. Early in the spring choose a sheltered spot in the garden, free from the shade or drip of trees; enrich and break up the soil very fine, make the surface quite smooth, take the hips from their winter quarters, break up the fruit, and sow the seeds thinly and evenly on the soil; take the back of the spade, or a board, and press the seed level with the ground, then cover them with about one-fourth to one-half of an inch of sand; if sand cannot be obtained take leaf mould, or soil from the woods, finely sifted, for the purpose; in dry weather give occasional waterings. Many of the seeds will come up the first year, and the balance will make their appearance in the second; the third year they can be transplanted to beds or rows to remain till they bloom, which will generally be the fourth or fifth year. It is truly astonishing to see the variety produced—red and white, rose and pink, may all be seen springing from seeds of the same plant, and from single to the most double; none but such as are of the finest form, very prolific, and possessing a good habit, should be reserved for culture. Our climate is so favourable to the maturing of seed that there is no reason why we should not only equal, but surpass, any European country in the cultivation of this "Queen of Flowers."

The blooming of seedlings can be readily hastened where time and convenience will admit. As soon as the young plants have made three or four leaves, lift them very carefully from the seed-bed with a transplanting trowel, and put them in pots of rich light earth; then place them in the shade and give a gentle watering and sprinkling over the leaves for a few weeks, when they may be planted into the ground to remain. I have in this way grown plants eighteen inches high the first season. They will, by this method, generally bloom the third year. The seeds are covered with a thick tough shell, which, if allowed to get perfectly dry, and kept in that state for a considerable period, will take two years to germinate, and perhaps not grow at all; regular moisture appears to be indispensable for keeping the

ell soft and exciting the embryo plant into with. The seeds are on this account practically furnished with a fleshy pericarp to prevent their becoming too dry for sowing, while nearly all other seeds do not germinate well unless dried before sowing. — *Went's Rose Manual.*

Insanity in the Horse.

I doubt that the animals which are supposed to possess many of the faculties as the human being—memory, attachment, gratitude, reason, fear, and hatred. Who has not observed the plain and manifest display of these principles and feelings in our quadruped dependants? The simple possession of these faculties implies that they may be used for purposes good or bad, and that, as in the human being, they may be deranged or destroyed by a multitude of causes which it is not necessary to particularise. In the quadruped as in the biped, the lesion or destruction of a certain part of the brain may draw after it the derangement, or disturbance, or perversion of a certain faculty of the mind. It is only because the mental faculties, and good as well as bad properties of the inferior beings, have been so lately observed and acknowledged, that any doubt on this point can for a moment be entertained. The disordered actions, the fury, the caprices, the vices, and more particularly the frenzy and total abandonment of reason, which are occasionally shown by the brute, are in the highest degree analogous to certain acts of insanity in man. It is merely to complete our subject that they are here introduced.

The reader is indebted to Professor Rodet, of Toulouse, for the anecdotes which follow: A horse, seven years old, was remarkable for an habitual air of stupidity, and a peculiar wandering expression of countenance. When he saw anything that he had not been accustomed to, or heard any sudden or unusual noise, whether it was near or at a distance, or sometimes when his corn was thrown into the manger without the precaution of speaking to him or patting him, he was frightened to an almost incredible degree; he recoiled precipitately, every limb trembled, and he struggled violently to escape. After several useless efforts to get away, he would work himself into the highest degree of rage, so that it was dangerous to approach him. This state of excitement was followed by dreadful convulsions, which did not cease until he had broken his halter, or otherwise detached himself from his trammels. He would then become calm, and

suffer himself to be led back to his stall: nor would anything more be seen but an almost continual inquietude, and a wandering and stupid expression of countenance. He had belonged to a brutal soldier, who had beaten him shamefully, and before which time he had been perfectly quiet and tractable.

A Piedmontese officer possessed a beautiful and in other respects serviceable mare, but which one peculiarity rendered exceedingly dangerous—that was a decided aversion to paper, which she recognised the moment she saw it, and even in the dark if two leaves were rubbed together. The effect produced by the sight or sound of it was so prompt and violent, that she several times unhorsed her rider. She had not the slightest fear of objects that would terrify most horses. She regarded not the music of the band, the whistling of the balls, the roaring of the cannon, the fire of the bivouacs, or the glittering of arms. The confusion and noise of an engagement made no impression upon her; the sight of no other white object affected her. No other sound was regarded; but the view or the rustling of paper roused her to madness.

A mare was perfectly manageable and betrayed no antipathy to the human being; nor to other animals, nor to horses, except they were of a light-grey colour; but the moment she saw a grey horse, she rushed towards it, and attacked it with the greatest fury. It was the same at all times, and everywhere. She was all that could be wished on the parade, on the route, in the ranks, in action, and in the stable; but if she once caught a glimpse of a grey or white horse, she rested not until she had thrown her rider or broken her halter, and then she rushed on her imagined foe with the greatest fury. She generally contrived to seize the animal by the head or throat, and held him so fast that she would suffocate him, if he were not promptly released from her bite.

Another mare exhibited no terror except of white inanimate objects, as white mantles or coats, and particularly white plumes. She would fly from them if she could; but if she was unable to accomplish this, she would rush furiously upon them, strike at them with her fore feet, and tear them with her teeth.

These instances are selected from various others, because they approach so nearly to what would be termed insanity in the human being. It is confined to one object,—it is a species of monomania, and as decided insanity as ever the biped discovered. One of these horses, the second, was by long and

kind attention divested of this insane terror, and became perfectly quiet and useful; but the other three bid defiance to all means of cure, and to coercion among the rest. If sufficient attention were paid to the subject, many of the obstinate caprices and inexplicable aversions which we can neither conquer nor change, would be classed under the term insanity. There cannot be a more remarkable analogy than that which sometimes exists between the insanity of man and these singularly capricious fancies in animals. The subject is worthy of attention. Has the principle of hereditary predisposition been applied to any of these anomalies?—*Youatt on the Horse.*

Extensive Iron Railway Bridge and Viaduct.

AN iron bridge, in size and magnificence perhaps never before equalled, is about to be erected, with a corresponding viaduct across the Tyne, from Gateshead to Newcastle-upon-Tyne, for the Newcastle and Berwick railway. The iron work contract was let at York; there were a good many tenders, but Messrs. Hawks Crawshaw and Sons, of Gateshead, were the successful competitors; Messrs. Losh, Wilson and Bell, of the Walker iron works, and Mr. John Abbott & Co., of the Gateshead iron works, will also take part with them in the construction of the work—Messrs. Hawks taking the castings for the approaches, and the other firms the arches for the bridge. The contractors are to make, supply, and erect all the cast and wrought iron and wood work for bridge and approaches, according to the designs, and under the instructions of R. Stephenson, Esq.; it is to consist of six cast iron circular arches, with a curved approach at each end, and will, in fact, be a double bridge; the railroad on the summit, and a carriage road and two foot paths suspended from the arches. The span of the arches will be 125 feet, supported on pillars 21½ feet high, and 14 inches square, and the approaches from both Newcastle and Gateshead will be 251 feet in length, and precisely similar. Two courses of three inch planking will be placed beneath the rails, between which will be a layer of Borrowdale's patent asphalted felt, to render them water proof; and the carriage road beneath will be paved with wood to prevent vibration, and the foot path planked. Every arch will be completely erected on the contractors' premises by itself, when the engineer will inspect and test its strength and fitness. The quantity of iron required will be about 6,000 tons, and the contract is stated to be £120,000. The entire cost, inclusive of lands and buildings, will be £300,

000, and it is to be finished, so as to be available for public traffic by the 1st of August, 1848.—*London Mining Journal.*

A Brilliant Whitewash.

TAKE half a bushel of nice, unslacked lime, slake it with boiling water, covering it during the process to keep in the steam. Strain the liquor through a fine sieve or strainer, and add to it a peck of clean salt, previously dissolved in warm water; three pounds of ground rice, ground to thin paste and stirred and boiled hot; half a pound of powdered Spanish whiting, and a pound of clean glue, which has been previously dissolved by first soaking it well, and then hanging it over a slow fire in a small kettle within a large one, filled with water. Add five gallons of hot water to the whole mixture; stir it well and let it stand a few days covered from the dirt. It should be put on quite hot; for this purpose, it can be kept in a kettle on a portable furnace. It is said that about one pint of this mixture will cover a square yard upon the outside of a house if properly applied. Brushes more or less small may be used according to the neatness of the job required. It retains its brilliancy for many years. There is nothing of the kind that will compare with it either for inside or outside walls.—*Exchange paper.*

TO PROTECT GRAIN FROM RATS.—An individual of much practical experience, states that green elder deposited in and about the mows of hay and grain, will prove an effectual preventive against the depredations of mice and rats. These animals are frequently very destructive in their ravages; and if a remedy so simple and easy of attainment is efficacious, it deserves to be known and remembered by all. We have long known that the leaves of the common mullein will drive rats from their haunts. There is something in the odor of this plant that is disgusting to their ratships, as was the leek to the ancient Pistol; they cannot "abide it."

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, FOURTH MONTH, 1847.

In a letter from Fred. Watts, of Carlisle, dated the 21st ult., he says:—

"In this vicinity the appearance of the wheat crop is very bad. Within my recollection it has never, at this season, been more unpromising. This is attributed to two causes:—the seed sown last fall was unseasoned; it was injured by the extreme heat which happened after the season of blossoming last year, and much of

it did not grow. The second cause is the very open season which has just passed: the ground has been exposed almost the whole winter to alternate thawing and freezing, to the great injury of the root of the plant. I did not myself sow any of the seed which grew last year, fearful of its defects, and I have great reason to congratulate myself on the appearance of my wheat compared with others, who sowed without the precaution of procuring old seed."

When the season of harvesting is particularly unfavourable, and owing to protracted wet weather, there is a disposition in the wheat or rye to grow, either while standing or in the sheaf, great care is requisite in the selection of seed. The editor had last summer two or three acres of splendid wheat, for which he had anticipated an extra price for seed; when, however, it was closely examined after it was housed, it was discovered that the berry had decidedly swollen before the wheat was cut. Many grains had more or less germinated, and it was of course unfit to be depended upon for seed. Great trouble and loss are sometimes consequent on a lack of care in this matter.

A friend at Easton, Md., makes numerous inquiries in relation to painting buildings, &c., and we would be glad if some of our readers would give an article on the subject.

Painting is a simple operation, except when very nice work is to be performed. Any storekeeper in the country who sells the materials for painting, &c., can give directions for mixing them, and a little practice will render the operation both of mixing and applying the paint, familiar. The editor has more than once painted his residence in the country, inside and out, and did it neatly and well, without difficulty.

At a meeting of the Burlington County Agricultural Society, held at Mount Holly, N. J., on the 13th ult., Dr. Spencer was chosen president, William N. Shinn, Isaac V. Brown, Charles Collins, and Levi Borton, Vice Presidents; Joseph F. Burr, recording secretary, Chalkley Gillingham, corresponding secretary, Charles M. Harker, treasurer, and Samuel A. Dibbins, Charles Haines, John W. Black, George B. Deacon, William Parry, and David B. Cole, executive committee.

At a meeting of the executive committee of the N. Y. State Agricultural Society, on the 4th ult., the secretary reported that in 19 counties of that state, the yield of Indian corn exceeded 80 bushels per acre: in 11 counties, crops were stated to exceed 100 bushels.

The largest yield in Cortland county was 154 bushels; in Oswego, 146; in Orange, 139; in Tioga, 125; and in Oneida, 123 bushels. The largest yield of wheat reported, was in Ontario, a fraction short of 60 bushels to the acre, on upwards of two acres.

In eight counties, the yield of oats exceeded 70 bushels per acre: the largest crop was 102 bushels, in Oneida.

A female correspondent of the New York Tribune, thinks that men ought to do the family washing, because they are stronger than women.

Our friend C. M. Hovey, editor of the Magazine of Horticulture, has issued proposals for the publication in numbers every alternate month, of a splendid new work on Fruit, entitled *THE FRUITS OF AMERICA*, containing richly coloured engravings, accompanied with the wood and foliage of all the choicest fruits cultivated in the United States; from paintings from nature, made expressly for this work, by W. SMARF. It will appear in royal octavo numbers, uniform with Audubon's Birds of America, and will contain four plates each, with eight pages of letter press, on the finest paper and beautiful type. In this style the numbers will come at \$1 each: or in imperial quarto very highly finished, \$2 a number.

R. CHISHOLM, Secretary of the Beaufort Agricultural Society, in a letter to the Horticultural Magazine, Boston, says the cultivation of fruit, especially peaches and pears, is rapidly extending in South Carolina. He is doubtful of success in apples, plums and cherries; and means to graft and bud his apples mainly upon the native crab, and upon other native or acclimated stocks. He thinks that when they get under way, the north will get its best peaches and late pears from the south, and the south its best apples, plums, and early pears from the north.

We have received from the publisher, George S. Appleton, No. 148 Chesnut street, a neat pamphlet by WILLIAM MILES, on *the Horse's Foot, and how to keep it sound*, with numerous illustrations, calculated to make the matter familiar to every one. The author has written for the information of the uninformed, and we are willing to acquiesce in the sentiment of one better able to judge than ourselves, that this little book should be in the hands of every person who owns a horse. The foot is a very tender part, and should be sedulously, and understandingly watched.

The quantity of rain which fell in the 3rd month, 1847, was nearly four inches and three-quarters.

4.70 in.

Penn. Hospital, 4th mo. 1st.

SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

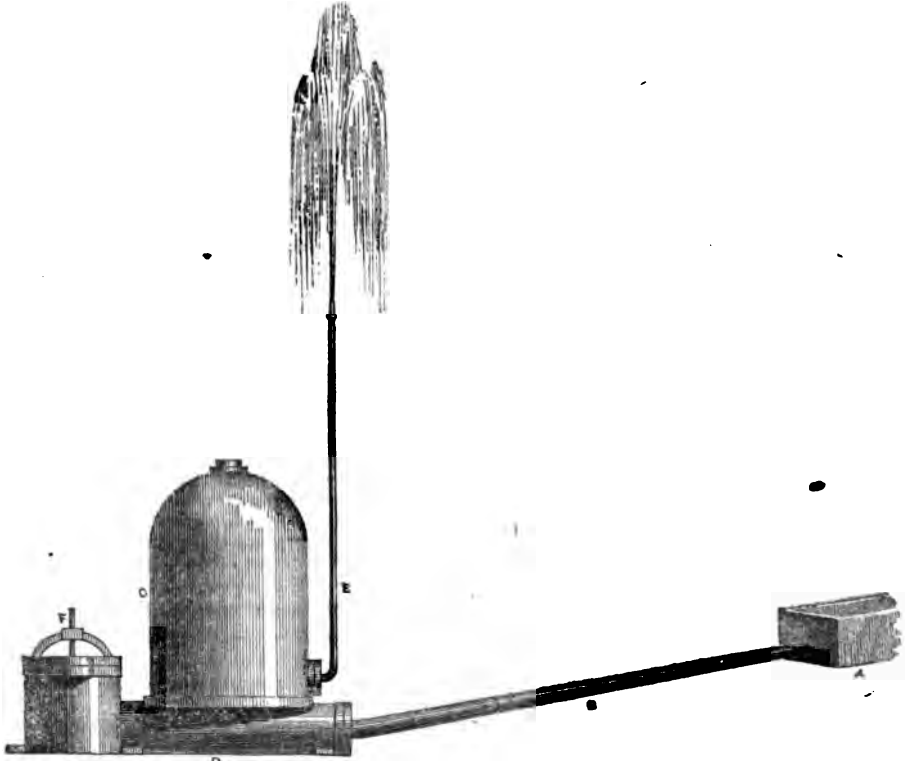
THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

MONTGOLFIER'S HYDRAULIC RAM,

A simple and effective Machine for forcing a portion of any Brook or Spring over any required distance and elevation, where a proportionate fall can be obtained.



A. Spring. B. Pipe from Spring to Machine. C. D. F. Machine. E. Pipe conveying Water from Machine to place required.

IT IS USED,

For supplying Farm-houses, Factories, Villages, Rail Road Stations, &c.,

WITH RUNNING WATER.

The simplicity of the operation of this Machine, proves at once its Effectiveness; as also the simplicity of the Machine itself shows its durability, as well as the very small amount of attention and repairs it will require.

The Subscriber is prepared to make and put up Rams of all sizes and kinds,—which he will warrant in every respect—with the accompanying Pipe, Reservoirs, Baths, Water Closets, Fountains, &c., &c., when required.

Persons wishing Rams sent to them, by measuring the amount of water their brook, or spring affords per minute, the head or fall, they can procure, the elevation to be overcome, and distance to be conveyed; can have the proper Ram and Pipe sent them with Directions for putting it up. If the supply be unlimited, the amount of water required should be stated. Rams may be had at the shop from \$15 upwards, with directions to put them up.

The expense of a Ram and necessary Pipe is so small as to be within the reach of every one; in most cases being less than that of a Well and Pump. *Mann, actured and for sale by*

HENRY P. M. BIRKINBINE,

Central Block, Broad street, between Race and Cherry, Phila.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Eye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoo Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Gun-wo in parcels to suit purchasers.

Philad., Feb., 1847.

M. S. POWELL.
11.**Fruit & Ornamental Trees.**

The subscriber offers for sale an extensive assortment of Fruit & Ornamental Trees of the most approved varieties, of fine size and warranted true to their respective names. Orders may be left with J. Tatum, No. 50, N. Fourth street, where catalogues may be obtained or E. F. Middleton, No. 9 Market st.

EZRA STOKES,

Mt. Laurel, near Moorestown, Burlington co., N. J.
Second month 15th, 1847.**R. SINCLAIR & CO.****Plough and Agricultural Machine****MANUFACTURERS & SEEDSMEN,
BALTIMORE:**

Have for sale the Maryland Self-Sharpening Plough, several sizes, warranted the most durable and simple Sub-soil Plough in this country; also Corn and Cob Crushers, Cylindrical Straw and Corn stalk Cutters, Burr Stone Mills, Corn Shellers, for hand and horse power, Horse Powers and Threshing Machines, Fanning Mills, with a numerous assortment of Ploughs, Drill Machines, Harrows, Farming and Garden Tools, Seeds, &c.

See Catalogues for particulars, to be had of us gratis.

Balt. March 15, 1847.—2 times.

FOR SALE,**AT D. O. FROUTY'S
AGRICULTURAL WAREHOUSE,**

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—11.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOSEPH H. COATES,

Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA**AGRICULTURAL WAREHOUSE,**

No. 291 Market Street, North side, between Seventh and Eighth Streets, Philadelphia.

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846.

1 yr.

NEW**Horticultural and Agricultural Ware-house,**

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Swede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash price, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Third month 15th, 1847

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMER'S CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50-
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
“ ANIMAL CHEMISTRY,	25
“ FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

AFRICAN GUANO.

FINEST quality African Guano, from the island of Ichaboe, warranted genuine. Also a few tons Peruvian.

For sale by J. B. A. & S. ALLEN,
No. 7 South Wharves, 2nd Oil Store below
Market street.

Philadelphia, March 17th, 1847.

Pondrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMER'S CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Contes' street. Present price, for seven barrels or more, \$1 87½ per barrel, containing four bushels each. Any number of barrels less than seven, \$2 each, or 37½ cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for corn.

JOSIAH TATUM.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

TERMS.—One dollar per annum, or five dollars for seven copies—payable in advance.

All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. XL—No. 10.]

5th mo. (May) 15th, 1847.

[Whole No. 148.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Cultivation of Indian Corn in Europe.

MR. EDWARDS.—In looking into a work of travels among some of the wilder and less frequented portions of Europe, I was struck at the extent in which that noble vegetable, the staple of our country, Indian corn, is used. It may be a matter of equal interest and curiosity to some of your readers, to know what are the foreign opinions concerning it—what countries make use of it, and in what form, as well as the mode of cultivation. It is not easy to get at facts that give any clear ideas on those points. Very few of those who travel have any taste for agriculture; they are generally persons of leisure and pleasure, with minds of some refinement, but of little strength or activity—or idle and rich, and without any knowledge of any one subject of general interest. Their travels are for the purpose of ridding themselves of an accumulated excitement, that puts them in motion, without any definite purpose in view. But their habits of thought

CAR.—VOL. XL.—No. 10.

lead them to remark upon society and its customs, to examine churches, specimens of architecture, and other fine arts—perhaps to speculate in politics; while that great art, on which rests the welfare of nations, is completely neglected. There is something too humble in the simple and laborious art of agriculture, for such persons; and they forget that they themselves would never have reached their present pretensions—that they would perhaps be at the plough, and their fortunes torn to fragments, if it were not appreciated both by rulers and the people, or held no rank in the economy of nations.

Arthur Young, who travelled in France more than fifty years ago, says nothing more of the Indian corn than that it is an extremely good substitute for a fallow, but he gives neither its mode of cultivation, nor any one particular concerning it—a seeming contemptuous neglect, that may be easily accounted for, when we consider that the United States had at that time risen to very little importance, that her resources and power were very little known, or her capability of feeding the starving masses of other countries. From this writer, who made what he called an agricultural tour, we have gained very little information. Morris Birkbeck, who travelled in France in 1814, expressly also to examine its agriculture, has done no more for us than to make known, that in some parts Indian corn is sown in May, as an early fodder, and that

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he saw women and children taking off the tops and blades; on all other points he is entirely silent. James Paul Cobbett, no doubt a son of the notorious William Cobbett, visited the same country in 1824, and although a lawyer, he tells us more than either of the farmers. No doubt his residence in this country, and his father's tuition, had led him to form a habit of observation on matters of rural economy. He says that he first saw corn in the province of Maine, a part of France, not by any means its most Southern, but in latitude 47° or 48° North. It was reported to him that it grew well, though from the quantity produced an acre, thirty-one bushels, we should infer the contrary; unless the French farmers have very peculiar ideas as to "growing well," or are contented with a small yield. "The people here use it only in the fattening of pigs, for which purpose it is considered, as it is in America, to be the best of all food. It is planted on ridges, which are about five feet apart; two rows of corn on every ridge. The plants are from a foot to eighteen inches apart in the row, and the rows about the same distance from each other."

This is all he has to say, and we infer that from its being so highly appreciated as food for pigs, it is not used as food by the nobler animal, man. As we go further south, it begins to grow in importance, but before we reach Italy, we shall find it universally used by the hardy mountaineers of the Tyrol, a race of men remarkable for their physical strength and high courage, and as they live almost exclusively on it, we may ascribe those noble personal attributes to the power it has of increasing muscular strength, and giving energy to the character. The French, who only give it to pigs, felt its power when they attempted to pass these mountains in some of Bonaparte's various invasions. The Tyrolese crushed his troops by thousands in their narrow passes. The late battle of Buena Vista, is another evidence of what it can do; nearly every man in Taylor's army was a corn-fed Western man, and no other men on earth could have withstood the physical weight and strength of five to one. The writer, to whom we have alluded as travelling in the Tyrol, Mr. Inglis, had sufficient taste and sensibility to leave large towns and their society, and strike at once into the recesses of the mountains. He travelled, as all men should, who wish to see a country, as a pedestrian. This gave him the opportunity of seeing those who are emphatically the people, of visiting the retired village, and the peasant's cottage; and the sketch he draws of a Tyrolese peasant's household, gives an

idea of comfort and happiness, and hardy independence, that can but increase our esteem for the character of those mountaineers. He admits that the growth and use of Indian corn, form the sources of this prosperity. On crossing these mountains a storm drove him to seek shelter in a house by the way-side. "It was, as I supposed, the house of a peasant; a proprietor of the middle kind, not rich, but with enough for the wants and comforts of a family." As dinner was ready, he took his seat with the family. The party consisted of six persons, but the dinner, which is of more importance, "consisted of soup of Indian corn and milk, a piece of boiled bacon, about five pounds weight, a salad, bread two thirds Indian corn and one third wheat, butter, and wine of Botzen." Certainly a very substantial repast. After dinner the proprietor and his family went over his little fields with the stranger. The whole land owned by this peasant was about four acres; one third was devoted to Indian corn; "of the remaining two acres and two-thirds, about half an acre was in wheat, another half acre in barley, a quarter of an acre in flax, an acre and little more in grass and wood, and about a quarter of an acre in garden, which contained cabbage, potatoes, salad, and a few cherry trees. The Indian corn was all required in the establishment—about one-half for the family, and the other for winter provision for the cow." The wheat and barley were sold, and produced more than sufficient to purchase coffee, sugar, wine, such implements as were wanted, and clothing for the family. They had also formed a surplus in money. The flax was spun and wove and used in the family. The grass served as summer pasture for the cows; the wood supplied firing. The ground was cultivated by the owner and his son, and was remarkably clean and in excellent order. No cheese was made—the soup consuming all the milk. There was no stock but the cow, two pigs, a litter of young ones, and several hens. All this seems to us a beautiful picture of industry and content, and of wealth too, if we consider their few wants. The whole is due to the crop of Indian corn, that is used three times a day, as a soup; and forms, too, much the larger part of their bread. But we will descend from the mountains to the richer and more glowing climate of Italy; we shall find there that this grain is by far the most important article in the agriculture of that fine country. The richest and best cultivated land is in Piedmont, the climate too, probably the most delightful in Europe. It sustains a very large population, chiefly by being divided into small farms of about sixty acres; though few or none of these are

owned by those who cultivate them, but are farmed on shares. The farm descends, however, from father to son, as a kind of patrimony, without any renewal of the lease; the landlord making these small subdivisions of his large estate, for the purpose of having his land better cultivated. In this way, the amount produced appears very large, each farm being kept in the highest state of cultivation, and the whole of it being brought into use. A farm of sixty acres is divided into fifteen acres of meadow, forty-five arable, and sown with grain and clover, about ten acres of the latter. From this are fed eight oxen, thirteen cows, or young stock and a horse. One of the sources of profit is the fattening every year a pair of oxen. After being worked, they are at five years of age fed off, and sold often for two hundred dollars the pair. Indian meal is employed largely in bringing them into condition for the butcher. To cultivate a farm of this size, or to be more exact, forty-five acres, two pair of oxen are employed to do the work of two ploughs, a pair of three years old and a pair of steers, to do the lighter work, and a horse to thresh the grain and go to market. All the work seems to be beautifully executed. Chateaufieux says, "that nothing can be more perfect or neater, than the hoeing or moulding up the Indian corn when in full growth by a single plough, with a pair of oxen, without injury to a single plant, while all the weeds are effectually destroyed." Their course of cultivation is one that we should think in this country too exhausting; or rather too much so for the amount of manure we can make. The first year, Indian corn; second, wheat; third, clover; which is ploughed up after the first mowing and left fallow—fourth year, wheat. The capability of the soil to yield year after year good crops, under such a system as this, is an evidence of its fertility, though much is acknowledged to be due to the abundance of manure; of which the whole is put on the Indian corn. How much of this grain is produced an acre we cannot ascertain; it is spoken of as being considerable, but no particular quantity given. We may assume it to be large, as it contributes "more than any other article to the maintenance of almost the whole country population of Piedmont, who eat it in a variety of forms." Two of the modes of using Indian corn for food, are in the forms of farinata and pollenta. The first is made by throwing the meal into a pot of boiling water, and putting butter and oil with it; this makes a kind of soup, which appears the common dish among the people of the South of Europe. Pollenta is made in the same way as the last material,

but without oil or butter. It is allowed to remain on the fire till of a consistency to be cut into slices; these are then put on the gridiron for a few minutes, and then we presume every one consults his own taste as to the disposing of them.

Having made known the mode of cultivating one of these small farms, it is a matter of curiosity to know what are its profits. It must first provide for the support of eight or nine persons, and maintain twenty-two head of stock; but we must bear in mind that the expenses are probably very small, and the climate mild and constant. The profits will then be taken from the fattening every year two oxen, a cow, and two pigs; from the sale of silk and a small portion of wine; from sending to market all the wheat and other grain, vegetables and poultry. The Indian corn goes to feed the labourers and fatten stock; none of it appears to be sold. From these hasty details your readers can judge of the importance of Indian corn in the economy of other nations besides our own. It is cultivated through nearly all Italy, and to some extent in Spain; but as the course of crops appears the same in the different provinces, it is not perhaps of sufficient interest to go into any further history of this important grain.

A. L. ELWYN.

April 29th, 1847.

Animal Offals.

Of dried blood.—This liquid—especially when it has been subjected to boiling, which, by coagulating it, retards its decomposition in the ground—is found so useful to the growth of sugar canes, that it has been lately sent from Paris at a cost of two dollars the one hundred pounds, to the colonies, where it arrives, costing four dollars. Blood, in whatever state it is found, and from whatever animal it comes, offers, therefore, to the inhabitants of the country a valuable resource for manure, and already, in this view, it has formed the base of an important speculation in Paris.

The following is one of the simplest modes of employing it. Some earth free from clods is dried in the oven, after baking bread, care being taken to stir it from time to time with a rake; it requires about four or five times as much as there is of liquid blood; the hot earth is brought to the front of the oven, and is sprinkled with the blood to be preserved, while turned over and over with the shovel; the mixture is then baked over, and stirred with the rake till the desiccation is complete. It can then be put up in old barrels or boxes, sheltered from the rain, to be used when needed. The earth in this preparation is

useful, especially to present the blood in a suitable state of division, and to render its decomposition slower and more regular. We can know, moreover, what surface these mixtures will cover as manure, by recollecting that three thousand pounds of liquid blood give seven hundred and fifty pounds of blood coagulated and dried, which is sufficient to manure an acre. One hundred pounds of blood in this state, equal as a manure three hundred pounds of broken bones, or three loads of good horse-dung, weighing together seven thousand and two hundred pounds. It is a manure by far superior to those known and designated by the names of *poudrette*, oil cakes, &c.; it is inferior only to the dried and powdered flesh.

Of the entrails, &c.—All the internal parts of animals, such as the liver, lungs, brain, heart, and the offal of the entrails, should be cut or hashed as fine as possible, and then mixed along with the emptyings of the intestines, with earth thoroughly dried, the latter in the proportion of six times the bulk of the animal matters. When this composition has been well worked over with the shovel, it is spread at the rate of five tons to the acre.

This manure gives excellent results, and is particularly favourable to wheat crops. If it cannot be spread immediately after its preparation, it must be preserved in a trench or some other cool place, or at any rate in the shade and covered with earth.

Bones: explanation of the various results of their use in agriculture.—None of the hard substances, the remains of animal organization, offer more remarkable examples of various effects in its action as a manure, than the bones in different states. We find in the numerous agricultural memoirs on the subject, the most singular problems which practice could leave to be solved.

The bones which are found in masses of any considerable importance at the disposal of agriculturists and speculators, are presented in the following different forms: *Fresh*, such as have been taken from animals recently slaughtered, *more or less broken*, or *whole*: in each of these three states, their decomposition is almost always too slow, stimulated though it be by the well known influences of air, heat and moisture; but, all things being equal externally, enormous differences have been observed, and which seemed inexplicable, in the duration of the decomposition, and consequently in the useful effect produced in a given time.

Some particular experiments have led me to discover the cause of these apparent anomalies. Bones contain in their cellular parts and in various cavities, a fat substance, se-

creted by itself, of more or less consistence. This substance is free in the adipose tissue of all the crevices which conceal it, for it suffices to open a passage for it by cutting the bones and plunging them in hot water, to bring it out and see it swimming upon the surface of the liquid. The average proportion which can be obtained from the various bones of the butcher, is about .01, although the very spongy parts which enclose the most, contain even .05.

The proportion of fat matter extracted by this process, diminishes gradually as the bones are dried; it becomes almost nothing when the desiccation takes place at a high temperature, either in the sun or by a stove. It appears, indeed, that as fast as the water which filled the interstices of the bone has evaporated, the grease liquefied by the heat has taken its place. One of the effects of this penetration, has been to impregnate the net-work which encloses the phosphate and the carbonate of lime. This net-work already with difficulty decomposed on account of its cohesion and insolubility, protected moreover by inorganic substances interposed, becomes still less alterable when the greasy matter not only impregnates and defends it from the penetration of water, but, becoming gradually acidified, forms with the lime a calcareous soap, which M. d'Arcet has shown to be undecomposable under atmospheric influence.

Bones in this nearly undecomposable state should, of course, exert but an insensible action as a manure, at least, unless very minutely divided. This also confirms and explains the practical remark, that although spread upon the ground for four years, these bones scarcely lost 0.08 of their weight, while, when recently taken from animals and deprived of nearly all their grease by boiling water, they readily permit the decomposition of their organic net-work, and lose in the same time from twenty-five to thirty per cent. of their weight.

Let us notice three other curious and apparently singular results of the use of bones treated with steam.

The broken bones from which gelatine has been obtained by the action of water and heat, in various processes, form a residuum which has often been tried as a manure. In some experiments a number of cultivators have obtained from these residuums, the first year, more beneficial effects than from bones themselves. In others, an action almost equal to that of bones, but less durable, was observed. More generally, however, little or no favourable influence upon vegetation was obtained. A great number of analyses, attentively examined, have enabled me to per-

ceive the different conditions under which this residuum, apparently the same, produced three sets of phenomena so distinct.

Bones treated by the process in question leave a variable residuum; I have sometimes met with it containing from eighty to ninety-five per cent. of the azotic, organic, decomposable matter of the bones, sometimes containing from twenty-five to thirty-three, but more usually one or two per cent.; finally, it sometimes contains scarcely a few thousandths. The following are the causes and effects of these various proportions: the temperature is almost always high in these operations, to the degree of rendering the greatest part of the net-work soluble, and consequently the bones are disaggregated and easily broken. But, although soluble, the organic alterable matter can still be held in the interstices, either because the washings proper to draw it out have been operated insufficiently, or ill-directed; or further, because the steam may have been chiefly condensed upon the sides of the digesters. This matter soluble in the proportion of 0.8 or 0.9 of the contents of the bones, will act more rapidly as a manure, since its dissolution and decomposition will be more rapid under the same influences; but, instead of being prolonged four or five years, its action will be almost exhausted in one season—practice has always confirmed this deduction of theory. A washing better conducted but incomplete, easily accounts for the presence and solubility of 0.25 to 0.33 of gelatinous matter in the residuum; whence, also, we deduce the prompt action, but less and less durable effect than in the preceding case. As to the reduction of 0.01 or 0.02 at the most in the proportion of the azotic decomposable substance, it evidently makes the residuum inefficacious as a manure. But this state of the case results, as I have proved, from one of the two following circumstances or their concurrence:

When the bones operated upon in the large way have been cut only in the cellular parts and the grease extracted, the division not being sufficiently thorough, the washing or maceration not being sufficient, only from thirteen to fifteen per cent. of dry gelatine is obtained; there should, therefore, remain about fifteen per cent. of fibrous tissue, or the products of its decomposition; but these dregs are scarcely thrown into a heap before a brisk fermentation is developed and ammoniacal vapors are disengaged; thus, the greatest part of the organic matter disappears.

The second circumstance which equally produces a very poor residuum, is when a well-conducted treatment is applied to bones

sufficiently divided, and finally, when they are exhausted by continued maceration, as in the processes of the hospitals.

We must not therefore generally expect to find in the manufactories of glue any but impoverished residuums and valueless as manures.

Hence the use of them has been abandoned by those cultivators, even who at first obtained beneficial results; the differences, however, are now easily explained, and a simple analysis, consisting in the exhaustion by boiling water of a portion dried and powdered, will suffice to test them, *a priori*; then drying and weighing anew the powdered exhausted substance, we shall find how much the boiling water has diminished the total weight, and consequently the proportion of soluble organic matter, all the rest being almost entirely inert as a manure, and able to act only as a calcareous amendment.

The application of bones to agriculture.—In their natural state bones reduced to powder are an excellent manure, which is spread in the average proportion of fifteen hundred pounds to the acre, and the influence of which is felt in a diminishing degree from three to five successive years, according to the soil and the seasons; all sorts of bones moreover are fit for this application, when the distance or want of communications does not permit the better part to be used for the arts which we shall speak of in a future division of the work;* and when, moreover, a machine can be procured to grind them, which is quite expensive in its first cost and requires a large expenditure of motive power.

However, in the absence of this machine, we shall often employ with advantage, especially in the intervals of field labour, the processes of breaking by hand, first cleaving the bones with an axe and then powdering them with a heavy mallet or sledge.

I have remarked that it is much easier to break bones when thoroughly dried and heated than when fresh; it will be best therefore to put them in the oven immediately after baking bread, and break them afterwards while they are warm.

In France broken bones are used as a manure in the department of Puy de Dôme; in Germany the practice is very extensive. Twelve bushels are there substituted for thirty-five loads of dung for an acre. But

* The bones used for the manufacture of animal black are not lost for agriculture, for we shall see that after having, in the state of powdered charcoal, served to refine sugar, they conceal a portion of coagulated blood, which conduces to render their effect as a manure very remarkable.

the English have applied this manure most in the large way. They derive from Russia and India considerable quantities of bones, besides a large part of those which result from their own large consumption of meat. A bushel of coarsely powdered bones costs the cultivators about one dollar and thirty cents; they use from fifteen to forty-five bushels to the acre; this manuring prolongs its effect during ten to twenty-five years, and enormously increases all the crops, especially those of grass and of turnips. It has been observed that a mixture of wood ashes of equal bulk, or two or three per cent. of saltpetre, renders this manure still more efficacious.

Bones in powder can be placed in the trenches with potatoes, or sown upon seed before passing the harrow or roller which covers it with earth.

It is sometimes preferred to mix them with the earth previously ploughed and harrowed, by passing the harrow and roller over them a second time.

If the bones were in fine powder, they could with advantage be placed upon the transplanted plants, and be covered up in closing the hole of the planter.—*Farmer's Mine.*

Farmers' Club, New York.

Osier Willow.—C. N. Bement presents two stalks of Osier Willow, of one year's growth. I have four rows 57 feet long, the rows three feet apart—I have just sold the spring cuttings for \$4, to a German, for basket making.

Last spring I set out with cuttings one acre and a quarter, which when four years old, if they grow as vigorous and thrifty as then, four rows will produce at the rate of \$100 per acre.

This willow flourishes best in a wet soil, too wet for grain or grasses.

I am informed that large quantities of this willow are imported from France, &c.

If it will command such a price, what crop would be more profitable?

D. Jay Browne—On Grand Island, in Niagara river, there is an extensive marsh, comprising about two hundred acres, covered with fir, resembling the Osier Willow. These willows have been used for wickerwork, and were found to be good.

Mr. Meigs—Will members please to state where, in this vicinity, they can be obtained?

Isaac Underhill of N. J.—James G. King, of Hoboken, has them on his farm.

Judge Van Wyck—The Osier Willow, like the whole family of the willows, is at-

tached to low wet grounds, and the value of it seems not to be generally known.

Mr. Meigs—I found a very few Osier Willow cradles in Philadelphia more than forty years ago, and admiring them for their neatness, for their safety to the infant, which cannot injure itself by contact with its yielding nature—I thought it so superior to all the pine, cherry, mahogany, and oak cradles I had seen—I bought one, which has now cradled two generations for me, and is fit to cradle ten more. And if handsome baskets and boxes are made of it to bring any suitable produce to market, then the farmer will find a profit in the basket or box, as merchants formerly did by making regular trunks to send their goods in to this country, and as the Frenchmen do by sending us their choicest prunes in boxes, ornamented and useful for other purposes.—*Farmer and Mechanic.*

The Daisy.

Bright flower, whose home is everywhere!
A pilgrim bold in Nature's care,
And oft the long year through, the heir
Of joy or sorrow.

Methinks that there abides in thee
Some concord with humanity,
Given to no other flower I see
The forest through!

And wherefore? Man is soon deprest;
A thoughtless thing! who, once unblest,
Does little on his memory rest,
Or on his reason.

But thou would'st teach him how to find
A shelter under every wind;
A hope for times that are unkind,
And every season.

Wordsworth.

BE ECONOMICAL.—No matter if your parents are worth millions, it is not the less proper that you should understand the value of money, and the honest, honourable means of acquiring it. What multitudes of young men, particularly in our cities, make shipwreck of reputation and health, and eventually of property, by neglect of this maxim. They are aware that their parents obtained their wealth by habits of industry, but they are ashamed of the name. They forget that wealth in this country passes rapidly from one to another, and that he who is rich to-day, may be poor to-morrow; or that he who relies on wealth amassed by his father, may end his days in a pauper-house. It is for the young man to say, whether by industry and economy he will secure competence and respectability; or by idleness, become worthless.—*Exchange Paper.*

From Downing's Horticulturist.

Culture of Tender Fruits in Cold Climates.

It is familiar to horticulturists, that warm low valleys, are more subject to night frosts than more elevated localities. Objects at the surface of the earth become chilled by the radiation of heat to the clear sky above, and cool by contact the surrounding air,—which thus becoming heavier, rolls down the sides of declivities, and settles like the waters of a lake in the lowest troughs. This effect is farther increased by the stillness which prevails in those sheltered places, favouring the more rapid cooling, by radiation of the exposed surfaces; while on hills the equilibrium is partially restored by the currents of wind. Independently of these causes, vegetation is more likely to suffer in such places from the succulent or unripened growth incident to the warmer position, and to the richer soil which more usually accumulates at the bottoms of valleys. The mucky soil also radiates heat more rapidly from its surface. The warmth in valleys, during the milder weather of winter, often swells fruit-buds, and severe cold following, destroys them. Higher and more bleak localities are not exposed to these variations, but are more uniformly cold; hence, for these five different reasons, such places are usually much the best for raising tender fruits.

These facts are familiar to many, but still are not so generally appreciated nor applied in practice, as they might be in many instances to very great advantage, in selecting grounds for orchards and gardens. Very erroneous conclusions even, have been adopted in consequence; and large parts of the Northern States are destitute of the finest fruits, from mistaken notions as to the practicability of their culture, or of their endurance of the climate.

Instances, showing in a strong light the principles already alluded to, may be of use to those who have given little attention to the subject.

The existence of colder air in valleys, on still, clear nights, has been obvious to every observing person riding rapidly over a rolling or broken face of country. The thermometer has often shown a difference of many degrees between a creek bottom and a neighbouring hill not fifty feet high. A very striking proof of this tendency was exhibited, at the time of a severe night frost, early in summer. The young leaves of the hickory had but partially expanded, and the fresh shoots, a few inches long, were succulent and tender. A few trees stood in

a hollow about twenty feet deep, and after the frost all the leaves and fresh branches on the lower parts of the trees were black and dead, while all above the surface of this lake of cold air, were green and uninjured.

Many years ago, the writer attempted the cultivation of young peach trees, on a rich soil near the bottom of a valley. But every winter the newly set buds were destroyed, or not one in fifty escaped, and one half of the young branches were often killed. Learning the cause, the trees were removed to an adjacent elevation fifty feet higher, when the difficulty was at once obviated.

In the winter of 1845-6, when the severity of cold on a clear night sunk the thermometer several degrees below zero, after the peach buds had been swelled by a few warm days, trees which stood on a hill thirty feet higher than the neighbouring creek valley, lost nine-tenths of their blossoms, while on another hill twenty feet still higher, nine-tenths escaped. The lake of cold air which covered the smaller hill, did not reach the top of the larger.

In a large portion of the State of New York, more especially in the region of the southern tier of counties, nearly all attempts to raise the tender fruits appear to have been relinquished. The inhabitants of the larger villages and their vicinity, places mostly situated at the bottoms of deep valleys, being persons of more enterprise and means, have tried the experiment—and for obvious causes have failed—and hence the conclusion that the climate was necessarily fatal. But there is strong reason to believe, that *through all the southern counties of New York, extending from Lake Erie to the Hudson, peaches may be raised with little difficulty*, by a proper selection of locality, and by an observance of the principles already pointed out;—that is, by selecting elevated spots, and dry and firm soils, and avoiding mucky ground in valleys. In the town of Spencer, in Tioga county, N. Y., near the head of Cayuga inlet, peaches have withstood the climate and done well, at an elevation of 700 feet above Cayuga lake. A striking instance was shown the writer last summer in Cohocton, Steuben county. The river valley in that town, though many hundred feet above the level of the sea, is much lower than the surrounding country, being flanked by hills about 500 feet high. In the valley the peach cannot be cultivated, the trees having been completely killed to the ground in winter. But on one of the neighbouring hills, 500 feet above, and probably 1200 feet above the sea, an orchard has been planted on good soil, which entirely escapes, and yields regular crops of fruit. In the

north-eastern part of Pennsylvania, probably twelve or fifteen hundred feet above the level of the ocean, in the summer of 1835, after one of the severest winters for twenty years, the only two peach trees observed in travelling many miles, were full of peaches; while the same winter, in Stroudsburg valley, a large tree was noticed killed down to the ground. While those hills are often covered with snow throughout the winter, the valleys are subjected to thaws, and hence become more unfavourable to tender vegetation.

Most of these cases show the great advantages of elevated sites. A dry and firm soil is, however, quite important. The influence of a compact knoll, rising scarcely above the rest of the field, has saved the corn which grew upon it; while on the more mucky and spongy portions of the rest of the field, radiating heat more freely, the crop has been destroyed. A successful cultivator of drained swamps, told me he could never plant such lands with corn safely till two or three weeks after the usual time of planting in common soils on an equal level. These influences apply with greater force to tender trees. Succulence and lateness of growth, caused by such soils, are always unfavourable to the endurance of cold; while a hard, dry soil, at the same time that it produces a less rapid growth, causes also an earlier cessation, and the young wood becomes matured and hardened before severe frosts. "Many kinds of herbaceous plants and small shrubs," says A. J. Downing, "may be naturalized on dry rock-work, or aggregations of stones mingled with soil, where they are found to thrive perfectly. We observed in the Botanic Garden at Cambridge, an *Azalea indica* and a species of *Erica*, that had braved the exceedingly low temperature of 30 degrees below zero, the past winter, having been planted several years previously in a mass of rock work, where they had annually matured their wood in the most perfect manner." The successful cultivation of the peach and grape, on the gently swelling hills called *mounds*, in the western prairies, while the crops are destroyed by frost on other lands, more fertile, affords another example. In Lycoming county, Pa., on the banks of the Loyalsock, a creek so rapid that no muck is deposited, but fine dry soil, peaches have been raised, though the cold is often intense.

It will be observed that in the preceding remarks, the influence of *large bodies of unfreezing water*, in softening the severity of the cold, in chilling the dangerous warm air which starts the buds in winter, and which afford great protection by the screen

of fog which they spread before the morning sun, has not been taken into account. This influence, where it exists, will in some cases, reverse some of the preceding rules.

J. J. THOMAS.

Macedon, Third mo., 1847.

From the Maine Farmer.

Insects Injurious to Wheat.

SIR,—Being very desirous of obtaining the means for completing the history of some of the insects injurious to grain, and having seen several articles on this subject in the "New England Farmer," copied from the "Maine Farmer," I have taken the liberty of addressing you respecting them.

There are several different kinds of insects which are injurious to wheat; and agricultural writers are not commonly enough acquainted with natural history to distinguish and describe the kinds correctly. This is the source of the contradictory statements and unsatisfactory discussions that have appeared in the public prints respecting the history and ravages of these insects.

One of these insects is the Hessian fly, the grub of which confines its attacks to the stems of the wheat, near the ground.

Another is the wheat fly—*Cecidomyia Tritici*—which, in its first or young state, is an orange coloured maggot, *without legs*, and growing to the length of *one-tenth of an inch* only, and never suspending itself by a thread. It lives in the ears of the wheat.

A third is a "worm"—probably a kind of caterpillar—color variously described, growing to the length of *one quarter of an inch*, or more. It is found on the ears of the wheat, and it *devours* the substance of the grain. I have now some grains of wheat more than half eaten by an insect, said to be of this kind. This "worm," as it is generally called, has been compared to the "clover-worms," which are sometimes seen suspended by threads from the clover in the mow, and it has the same power of spinning threads and of suspending itself thereby. Permit me to refer you to my work on insects injurious to vegetation, pages 445 to 447, where has been collected a summary of the various accounts respecting this particular kind of wheat insect. It is possible that these accounts refer to more than one kind; but it is certain that they cannot, if correct, refer to the orange colored maggot of the wheat fly above mentioned. The great disparity in the size is sufficient to show that the insects are not the same; and the habit of suspending itself by a thread, peculiar to caterpillars, is not found in the true maggots of the *Cecidomyia* or wheat fly.

There are at least three other kinds of insects injurious to wheat in this country; but they are not likely to be mistaken for either of the foregoing, if ordinary care is taken in examining them. One is the wheat-moth, called in the Southern States the "flying weevil," and at the West the "white weevil." It is found both in the fields and in granaries and mills. The young are very small whitish wormlike caterpillars, which live singly within the grains, and devour the substance, leaving the hull whole and untouched, till they are about to come forth. The second is a somewhat larger caterpillar, found only in granaries and in stored grain. It fastens several grains together, and lives in these masses of clustered grains, upon the substance of the wheat; and it turns to a small moth or miller. The third is the "black-weevil of the Southern States, and is rarely found here. It is, when young, a small whitish grub, which lives within the grains of wheat, and turns to a little brown or blackish beetle. These three kinds are described in my work, pages 70, 363 and 365.

In the "Essays on the Grain Worm, No. 2," published in the *Maine Farmer*, Mr. L. Norcross, of Dixfield, states that some of the worms are *one-fourth of an inch in length*. He adds, that "two years ago I harvested my grain very damp, and it was heated in the mow. I threshed two bushels, and winnowed it in the wind; and after it had lain in the pile an hour, the top of the pile was alive with worms or caterpillars, about three-eighths of an inch in length, with a row of bristles sticking up along their backs and from their sides."

The orange coloured maggots of the wheat fly are found in Dixmont, Maine, and probably in many other parts of the State; but the wheat caterpillars are also found there, and five of them have been sent to me from Dixmont, where they are said to have been taken from the wheat, the grains of which had been much eaten by them. These caterpillars were from half an inch to five-eighths of an inch in length. They were of a light brown colour, with three longitudinal whitish lines on the back, and a broad white stripe on each side, just above the legs. The latter were sixteen in number, six before, two behind, and eight under the intermediate part of the body. They were in a languishing condition, and all perished without completing their transformations. Had they lived, they would have turned first to brownish chrysalides, and then to some kind of winged moths or millers. If any of these insects remain, it is probable they have already taken the chrysalis form,

or are preparing for it, either by burrowing in the ground like canker-worms when they leave the trees, or by seeking a place of concealment above ground.

It will give me much pleasure to be put in communication with any persons who can provide me with a considerable number of these wheat worms with legs, or wheat caterpillars, or with the same after they have taken the chrysalis form. Gentlemen who are able and willing thus to favour me, are requested to make known their intentions by a letter addressed to me by mail.

Will you be pleased, sir, to bring this subject before the readers of your useful paper, in such a way as will best promote the object of my inquiries; by so doing you will greatly oblige,

Yours respectfully,

THADDEUS WILLIAM HARRIS.

Cambridge, Mass., November, 1846.

Mammoth Corn.

MR. EDITOR,—As corn is an article of the most extensive consumption amongst us—without which we could not well live; and for the special benefit of those of your readers, who doubt the advantage of a careful selection of their seed, I would beg leave to state a *fact* or two, and refer them to the *proof* at hand. From the specimens shown me, in its growing state, as well as when gathered, I must say, *emphatically*, it yields more for the industrious and energetic planter, than any grain of the kind I have seen or even dreamed of. On an exhausted plantation, near Monticello, on the red hills of Little River, in old worn-out Fairfield, Mr. J. R. D.—I trust he will excuse this liberty, in an old grey-headed man,—has succeeded this year in making corn, measuring from twelve to *thirteen* inches in *circumference*, and from twelve to *fourteen* inches in length, having forty to forty-eight rows of grains on the ear! This, however, is a yield of but one ear to the stalk—the ears from stalks bearing five or six ears or more, are, of course, smaller; though as many as three, generally, of the ears from those stalks, will *each* measure, when shelled, nearly twice as much as the largest ear of the common corn. It is mostly of the white gourd-seed corn. The question may naturally arise in the minds of many—whence did Mr. D. get this seed? I answer, that he *made* it by a careful and judicious selection from a variety of seed—the one is, I learn, remarkable only for a grain an inch deep, or a cob the *size of your finger*,—another, for its thickness of cob, but provokingly short—and the other for its length of cob, provok-

north-eastern part of Pennsylvania, probably twelve or fifteen hundred feet above the level of the ocean, in the summer of 1835, after one of the severest winters for twenty years, the only two peach trees observed in travelling many miles, were full of peaches; while the same winter, in Stroudsburg valley, a large tree was noticed killed down to the ground. While those hills are covered with snow throughout the valleys are subjected to hence become more unfavorable to vegetation.

Most of these cases abate of elevated sites is, however, quite in of a compact knoll the rest of the which grew mucky and the field, crop has tivated neve

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Agricultural Meeting at the State-house, Boston, April 6th.

Hon. Mr. STATEWEATHER in the Chair.
Subject - Profits of Farming."

Hon. Mr. Denny of Westborough, said the subject before the meeting was of vast importance, and prominent facts had been adduced, showing that the opinion prevailing in the minds of some that farming is unprofitable, is unfounded. It was not his object to detract from, or to underrate, other professions, nor to extol too highly the business of farming, but to lead the mind to the great truths that exist in relation to the subject. On one side it had been asserted that farming was not profitable, that a farmer could merely get a living, but no facts were brought forward to support these statements. On the other hand, we have numerous and well authenticated facts, showing that farming is profitable, and many become wealthy in this profession. The community may be divided into two great classes, the farmers form one, and all other professions the other. Farmers have as much wealth as others, and more happiness, better health, and greater longevity.

There are some failures and hardships among farmers, it is not all sunshine with them, but they have more sunshine and less storms than others. With the same capital, talent, and industry, farmers are the most successful. Farming is neglected, and too many young men are turning their attention to other pursuits. A mercantile house advertised for a clerk, and in the course of 24 hours it had 287 applications.

Mr. David Goodale, of Marlborough, said he was a farmer and the descendant of farmers. He said there were other profits in

of fog which and cents. In his coming sun, he of Hagar is answered. He This in a sufficiency and not troubled case abundance. The sleep of the man is sweet. If his fare be he enjoys it with a good appetite. This is the most healthy, and a calling the most favourable to good morals. He is generally free from debts, and the vexations visits of the sheriff. Farmers are a prudent class; they will wear an old coat rather than run into debt for a new one. They do not count their chickens before they are hatched, nor like the Southern planters, spend the proceeds of their crops before they are raised. Although farming afforded great advantages, he did not think it generally produced so large a per centage as some had stated. Large stories had been told, and they might be true, but they were unusual cases. He would name one of the kind. An apple tree produced in one season 22 barrels of fruit, that was sold at \$2 50 per barrel.

Hon. Mr. Clark, of Walpole, read a statistical document made up from replies to a circular sent to every town in the State, with inquiries in relation to failures. Returns were made from 186 towns, containing a population of 240,000. The failures were 357, only 59 of which were farmers, and we know not how many of these failed from indolence, intemperance, speculation, or by attending to some other business.

Mr. William Parker, of Boston, said that it might be said that he had at a previous meeting told a great story as to the profits of farming, but it was true. He thought any man who paid strict attention to the business could make it profitable. In relation to the great profit from one apple tree, as had been named, that could be extended, but many neglected the business. He knew a farmer in Middlesex, who would not set out apple trees, as he would not live to enjoy the products. His son followed him with the same views, but the grandson set an orchard, and all three lived to drink cider from the orchard.

Mr. Brooks, of Princeton, said that he had seen nothing to shake his belief that a good farmer can make ten or fifteen per cent. profit on his capital, and attend to the common business of farming, such as raising corn and other grains, potatoes, hay, and stock. In regard to the remarks of Mr. Everett, who said the other evening that farming in Worcester county would not pay more than 4 per cent. on the capital, he (Mr. E.) has a brother in that county, that informed him that he gained \$200 a year. Another farmer in Worcester, who at first thought that

is (Mr. B.'s) statement was wrong, said affirming an estimate, that he had made per cent. on his capital for eleven years

Buckminster, of the Ploughman, said generally farms could not be leased so much more than five per cent. This way of showing the profit, and enough. It was better than larger if a large percentage could be capitalists would buy up all the land, those who were farmers, would become labourers under them, as is the case in Europe, where land cannot be bought. It is well for us that very great profits cannot be made, as that would destroy the happy equality that now exists. Farmers do not work hard generally. He had inquired, and in some sections they do not work more than half their time. Many having farms worth three to five thousand dollars, work only about half their time. He said that one reason that farmers made no more profit is because they are so slow to adopt improvements. A horse rake may be bought for four dollars, with which a man and boy, or with a steady horse, a man can rake an acre in half an hour. Farmers live better than any other class.

Mr. Calhoun said that we were about closing this subject, and we should come to some conclusion. From the numerous facts brought forward showing the profits of farming, we must come to the conclusion that farming is more profitable than any other profession. Farmers who attend to their business succeed well. The exceptions are rare.

A stranger remarked that he thought that take farming all over New England, it was not generally considered profitable.

Mr. French, of Braintree, said that statements had been rather vague, and it was difficult to make correct estimates of farming by single crops, or one year's production. We want something more tangible. He said that farmers in his neighbourhood who commenced with very little, had been diligent at home, constantly attending to their business, and they had accumulated estates; a number to the amount of \$10,000 or \$15,000. If a farmer saves only a shilling a day, it will amount to a competency in the course of a number of years.—*Boston Cultivator*.

The Ass and the Mule.

JACKS have sold in Kentucky as high as \$5000. Their value at this time, April, 1842, is nominal—16 hands is the largest size—15 is quite common—mules of 17

hands are sometimes to be met with. The quality of the mule is improved by the blood of the mare. It is quite common to work mares while going to the Jack, while in foal, and while suckling. Mules should be weaned at about five months old—we feed our mules on grain, corn, oats, or rye, the latter in the form of chop, from season to season until sold. I mean during the winter, our blue grass being all-sufficient during the rest of the year. It is necessary, however, to grain feed them on the grass through the summer they are fattened for market—we sell the majority of our stock the fall after they are two—mostly to the cotton planters—a few of late to the Pennsylvania iron works, and a few to Cuba; the remainder we sell at a year older. The present prices at a given age are as variant as that of horses, cattle, or any thing else whose value depends upon its quality, and the demands and monetary condition of the country—sales were effected last fall at \$35 to \$125. I have known mules sell at weaning time for \$150, and when grown, as high as \$300. They should be broke at the age you would break a horse; and, according to my observation, by the same system. They eat as much as horses, and reward a liberal allowance as well, though he may, when unavoidable, be able to withstand privation better. I have known mules to travel ten miles within the hour in light harness. I drove a pair from Lexington to the Blue Lick in six hours, stopping one hour by the way—the distance is forty miles. What may be the precise difference in "the age of the mule as compared with the horse, under the same treatment, on a plantation," I cannot say; the advantage, however, would be on the side of the former—I know of no particular inconvenience in using them in a carriage.

The mule trade in Kentucky is of about forty years' standing. For the first twenty years the number increased gradually, to about eight hundred; during the next fifteen or sixteen years, it went up to four or five thousand; since when, it has gone back to where it was twenty years ago. Our farmers who breed mules, prefer to sell them when they put their mares to the Jack, or at weaning time. The price rose gradually from twenty to fifty dollars for colts. My last lot cost me in 1838, fifty dollars, and the season of my Jack given in. The mares were selected, and the colts bargained for in the season of 1837. When the price went down with everything else a few years back, they discontinued, in a great degree, the breeding of them; so that our present prices result from a greatly insufficient supply for the ordinary demand. I sold my stock of

three year olds,—seventy-three head—last fall at \$70. I was anxious to retain two or three pair—not the largest—at \$250 a pair, but the purchaser objected—but he was equally anxious to select for me some twenty head—and not the least—at thirty-five dollars. I declined taking them. The number of mules annually exported from Kentucky, may be set down at the whole number raised—as the small number broke to service in this State, are sure, at least, to find their way to a foreign market—at a rough guess, I would fix the nett average value, in market, of our mules, at about \$70.

The reason why mules have been raised in such numbers in Kentucky more than in other States, is the better adaptation of our soil and climate to the production of grain and grass than any other State, and for which we can obtain a market only in the form of live stock. The “cost of raising a mule to be three years old, when corn is twenty-five cents per bushel,” charging from the usual time of weaning, 25th of September, may be computed at about thirty dollars, including a fair equivalent for grazing and salting. I have not known of a case of a female mule breeding.—*Youatt on the Horse.*

Philadelphia Hay Market.

We are indebted to the politeness of Mr. H. Whitton, Superintendent of the Farmers' Hay and Straw Market, for the subjoined statement of the receipts of hay at that establishment, during the two years ending 30th of September, inclusive:

	1845-46.	1844-45.
October, <i>Loads,</i>	1,045	1,080
November,	1,000	1,075
December,	1,275	1,215
January,	1,225	1,170
February,	1,112	1,135
March,	1,300	1,185
April,	1,250	1,305
May,	1,104	1,075
June,	1,045	815
July,	850	885
August,	1,140	820
September,	1,235	980
Total,	13,571	12,740
Equal in tons, to	12,225	11,461

The incoming crop of hay is likely to prove abundant, and of good quality. The receipts at the other yards in Philadelphia are inconsiderable—scarcely reaching 3000 loads per annum—but considerable supplies of pressed hay come forward for the river counties, and elsewhere, for shipment.

Prices continue steady, and we quote the range at 70 to 80 cents for good Timothy, and 60 to 70 cents for Clover and Timothy mixed. Rye straw is worth six to seven cents.—*Pa. Enquirer, Oct., 1847.*

COTTAGE CULTURE OF TEA IN CHINA.—

The green-tree shrub is cultivated in some parts rather extensively, but, if we except a small quantity of tea which is annually sent over to Ningpo and the adjoining towns on the mainland, the whole of the produce is used by the natives themselves. Every small farmer and cottager has a few plants on his own premises, which he rears with considerable care, but seems to have no wish to enter on its cultivation on a larger scale for exportation. Indeed, it is questionable if it would pay, as the soil is scarcely rich enough, and although the shrub grows pretty well, it is far from being so luxuriant as it is in the larger tea districts of the mainland, which I afterwards visited.—*Fortune's Narrative.*

KEEPING HOUSE.—A young married woman, who has not had the opportunity of profiting by the advice and example of a good mother, will find some difficulty at first in spending her money to the best advantage; for there is really an art in *spending* money, though not in *getting rid* of it. Some women will keep house respectably and plentifully on one-third less money than will be required by others, and without either meanness or illiberal dealing. But, to do this, judgment, forethought, and experience are necessary. One woman shall be able to tell you how much her housekeeping costs to a shilling, while another cannot even guess within ten. The former has method, rule, regularity, and a certain sum assigned to her; with the latter it is all hap-hazard, it comes and it goes, she neither knows how nor cares. And this is almost sure to be the case if the money is doled out by her husband in a few shillings at a time.—*Exchange paper.*

CEMENT FOR GRAFTING.—One part of good beef's tallow, two parts of pure beeswax, and four parts of rosin. Melt all and mix well; then pour into cold water and work very thoroughly, as shoemaker's wax. We have frequently used cement made with these proportions, and it will not melt in hot weather, nor crack in cold weather.—*Exchange paper.*

Transplanting Trees.

We have at various times suggested to our readers the importance of the cultivation of fruit. We have also not been backward in hinting that a tree of good fruit occupied no more space in an orchard or a garden, than a worthless one. We now take the opportunity to say, that to select good fruit trees from the nursery, is not all that is essential. Careful planting is of great importance, as will appear from the following remarks taken from *Downing's* excellent work on the *Fruits and Fruit Trees of America*, a work which comes at \$1.50, which we have constantly for sale, and which, we think, every farmer will gain by possessing himself of. It contains abundance of valuable practical information. And further—there is a great deal to do after an orchard is planted: we mean in taking care to protect it from the cattle, sheep, and hogs. The editor remembers once hearing a nurseryman remark, that he believed nearly one half the trees sold and planted were destroyed by the cattle, &c., and in other ways, for want of care. Why should this be? Surely a tree that is worth buying, and the labour of planting, is worth subsequent protection.—Ed.

As nearly all fruit trees are raised first in nurseries, and then removed to their final position in the orchard or fruit garden; as upon the manner of this removal depends not only their slow or rapid growth, their feebleness or vigor afterwards, and in many cases even their life, it is evident that it is in the highest degree important to understand and practise well this *transplanting*.

The season best adapted for transplanting fruit trees is a matter open to much difference of opinion among horticulturists; a difference founded mainly on experience, but without taking into account variation of climate and soils, two very important circumstances in all operations of this kind.

All physiologists, however, agree that the best season for transplanting deciduous trees is in autumn, directly after the fall of the leaf. The tree is then in a completely dormant state. Transplanted at this early season, whatever wounds may have been made in the roots commence healing at once, as a deposit directly takes place of granulous matter from the wound, and when the spring arrives the tree is already somewhat established, and ready to commence its growth. Autumn planting is for this reason greatly to be preferred in all mild climates and dry soils; and even for very hardy trees as the apple, in colder latitudes; as the fixed position in the ground, which trees planted then get by the autumnal and early spring rains, gives them an advantage, at the next season of growth, over newly moved trees.

On the other hand, in the northern portions of the Union, where the winters commence early, and are severe, spring planting is greatly preferred. There autumn and

winter are not mild enough to allow this gradual process of healing and establishing the roots to go on; for when the ground is frozen to the depth of the roots of a tree, all that slow growth and collection of nutriment by the roots is necessarily at an end. And the more tender sorts of fruit trees, the Peach and Apricot, which are less hardy when newly planted than when their roots are entire, and well fixed in the soil, are liable to injury in their branches by the cold. The proper time in such a climate, is as early as the ground is in a fit condition in the spring.

Early in autumn, and in spring before the buds expand, may as a general rule, be considered the best seasons for transplanting. It is true that there are instances of excellent success in planting at all seasons, except midsummer; and there are many who, from having been once or twice successful in transplanting when trees were nearly in leaf, avow that to be the best season; not taking into account, that their success was probably entirely owing to a fortunately damp state of the atmosphere at the time, and abundant rains after the experiment was performed. In the middle States, we are frequently liable to a dry period in early summer, directly following the season of removal, and if transplanting is deferred to a late period in spring, many of the trees will perish from drought, before their roots become established in the soil. Spring planting should, therefore, always be performed as soon as possible, that the roots may have the great benefit of the early and abundant rains of that season, and get well started before the heat of summer commences. For the neighbourhood of New York, therefore, the best periods are, from the fall of the leaf to the middle of November, in autumn; and from the close of winter to the middle of April, in the spring; though commonly, the seasons of removal are frequently extended a month beyond these limits.

Taking up the trees is an important part of the operation. A planter should never forget that it is by the delicate and tender points or extremities of the root that trees take up their food; and that the chance of complete success is lessened, by every one of these points that is bruised or destroyed. If we could remove trees with every fibre entire, as we do a plant in a pot, they would scarcely show any sign of their change of position. In most cases, especially in that of trees taken from nurseries, this is, by the operation of removal, nearly impossible. But although we may not hope to get every root entire, we may, with proper care, preserve by far the larger portion of them, and more

particularly the small and delicate fibres. After being taken up, they should be planted directly; or, if this cannot be done, they should be kept from drying by a covering of mats, and when sent to a distance by being packed in damp moss.*

Preparing the places. Here is the fatal stumbling block of all novices and ignorant persons in transplanting. An English gardener, when he is about to plant fruit trees, talks about *preparing his borders*, an American says he will *dig his holes*; and we cannot give a more forcible illustration of the ideas of two persons as to the wants of a fruit tree, or a better notion of the comparative provision made to supply these wants, than by contrasting the two phrases themselves. The one looks upon a tree as a living being, whose life is to be rendered long, vigorous, and fruitful, by a good supply of food, and a soil mellow and easily penetrated by the smallest fibre; the other considers it very much in the light of a truncheon or a post, which he thrusts into the smallest possible hole, and supplies with the least portion of manure, trusting to what he seems to believe the inextinguishable powers of nature to make roots and branches under any circumstances. It is true that the terms differ somewhat from the nature of the culture and the greater preparation necessary in planting fruit trees in England, but this is not by any means sufficient to justify the different modes of performing the same operation there and here.

In truth, in this country, where the sun and climate are so favourable, where pruning and training are comparatively so little necessary, the great requisite to success in the ordinary culture of fruit trees is the *proper preparation of the soil* before a tree is planted. Whether a transplanted tree shall struggle several years to recover, or grow moderately after a short time, or at once start into a very luxuriant and vigorous growth, depends entirely upon the amount of care and labour the planter is willing to bestow on the soil for his trees. We have seen several instances where, side by side, one man planted his trees in large spaces of deeply moved and rich soil, and another in small holes in the common mode, which uniformly showed the trees of the first,

larger after five years, than those of the last, after twelve.

No fruit tree should be planted in a hole of less size than three feet square, and eighteen inches to two feet deep. To this size and depth the soil should be removed and well pulverized, and it should, if necessary, be properly enriched by the application of manure, which must be thoroughly mixed with the whole mass of prepared soil by repeated turnings with the spade. This preparation will answer, but the most skillful cultivators among us make their spaces four or five feet in diameter, or three times the size of the roots, and it is incredible how much the luxuriance and vigor of growth, even in a poor soil, are promoted by this. No after mending of the soil, or top dressings applied to the surface, can, in a climate of dry summers like ours, equal the effects of this early and deep loosening and enriching the soil. Its effects on the growth and health of the tree are permanent, and the little expense and care necessary in this preparation is a source of early and constant pleasure to the planter. This preparation may be made just before the tree is planted, but in heavy soils, it is much better to do it several months previously; and no shallow ploughing of the soil can obviate the necessity and advantages of the practice, where healthy, vigorous orchards or fruit gardens are desired.

The whole art of transplanting, after this, consists in placing the roots as they were before, or in the most favourable position for growth. Begin by filling the hole with the prepared soil, within as many inches of the top as will allow the tree to stand exactly as deep as it previously stood. With the spade, shape this soil for the roots in the form of a little hillock on which to place the roots—and not, as is commonly done, in the form of a hollow; the roots will then extend in their natural position, not being forced to turn up at the ends. Next examine the roots, and cut off all wounded parts, paring the wound smooth. Hold the tree upright on its little mound in the hole of prepared soil; extend the roots and cover them carefully with the remaining pulverized soil. As much of the success of transplanting depends on bringing the soil in contact with every fibre, so as to leave no hollows to cause the decay of the roots, not only must this be secured by patiently filling-in all cavities among the roots, but when the trees are not quite small, it is customary to pour in a pail of water when the roots are nearly all covered with soil. This carries the liquid mould to every hidden part. After the water has settled away, fill up the hole, pressing the earth

* We should notice an important exception to this in the case of trees packed for shipping across the Atlantic. In this case they should be packed only in *dry* moss; the moisture of the sea air being sufficient to keep the roots in good condition, while if packed in damp moss, they will be injured by rotting or excessive growth.

gently about the tree with the foot, but avoiding the common practice of shaking it up and down by the stem. In windy situations it will be necessary to place a stake by the side of each tree to hold it upright, until it shall have taken firm root in the soil, but it is not needful in ordinary cases.

Avoid deep planting. More than half the losses in orchard planting in America arise from this cause, and the equally common one of crowding the earth too tightly about the roots. No tree should be planted deeper than it formerly grew, as its roots are stifled from the want of air, or starved by the poverty of the soil at the depth where they are placed. It is much the better and more natural process in fact, to plant the tree so that it shall, when the whole is complete, appear just as deep as before, but standing on a little mound two or three inches higher than the level of the ground about. This, when the mound settles, will leave it nearly on the level with the previous surface.

Mulching is an excellent practice with transplanted trees, and more especially for those which are removed late in the spring. Mulching is nothing more than covering the ground about the stems with coarse straw, or litter from the barn-yard, which by preventing evaporation, keeps the soil from becoming dry, and maintains it in that moist and equable condition of temperature most favourable to the growth of young roots. Very many trees, in a dry season, fail at midsummer, after having made a fine start, from the parched and variable condition of the earth about the roots. Watering, frequently fails to save such trees, but mulching when they are planted, will entirely obviate the necessity of watering in dry seasons, and promote growth under any circumstances. Indeed, watering upon the surface, as commonly performed, is a most injurious practice, as the roots stimulated at one period of the day by water, are only rendered more susceptible to the action of the hot sun at another, and the surface of the ground becomes so hard, by repeated watering, that the beneficial access of the air is almost cut off. If trees are well watered in the holes, while transplanting is going on, they will rarely need it again, and we may say *never*, if they are well mulched directly after planting.

The best manure to be used in preparing the soil for transplanting trees, is a compost formed of two-thirds muck or black peat earth, reduced by fermenting it several months in a heap with one-third fresh barn-yard manure. Almost every farm will supply this, and it is more permanent in its effects, and less drying in its nature, than the

common manure of the stable. An admirable manure, recently applied with great success, is charcoal—the small broken bits and refuse of the charcoal pits—mixed intimately with the soil. Air-slaked lime is an excellent manure for fruit trees, in soils that are not naturally calcareous. Two or three handfuls may be mixed with the soil when preparing each space for planting, and a top dressing may be applied with advantage occasionally afterwards, to increase their productiveness. But wherever large orchards or fruit gardens are to be planted, the muck compost heap should be made ready beforehand, as it is the cheapest, most valuable, and durable of all manures for fruit trees.

Pruning the heads of transplanted trees, at the season of removal, we think generally an injurious practice. It is certainly needless and hurtful in the case of small trees, or those of such a size as will allow the roots to be taken up nearly entire; for, as the action of the branches and the roots is precisely reciprocal, and as new roots are rapidly formed just in proportion to the healthy action of the leaves, it follows that by needlessly cutting off branches we lessen the vital action of the whole tree. At the same time, where trees are transplanted of so large a size that some of the roots are lost in removing them, it is necessary to cut back or shorten a few of the branches—as many as will restore the balance of the system—otherwise the perspiration of the leaves may be so great, as to exhaust the supply of sap faster than the roots can collect it. A little judgment only is necessary, to see at a glance, how much of the top must be pruned away before planting the tree, to equalize the loss between the branches and the roots.

When it is necessary to transplant fruit trees of large size, the best practice is to prepare them previously by digging a trench round the whole mass of roots, undermining them, and cutting off all roots projecting beyond this line. The trench should be dug at such a distance from the tree as will include all the large and sufficient ball of roots, and it should be done in the spring, or before midsummer, when it is desirable to remove the tree the next year. After all the roots that extend to this circular trench are cut off, the earth is replaced, and by the season following an abundance of small fibres is sent out by the amputated roots, which, when the whole is now removed, will insure the success and speedy growth of the tree. This is more completely the case when the tree is prepared two years before transplanting. A variation of this mode, which has been found quite as successful and less labo-

riqua, consists in leaving the trench open, and covering it with boards only, or boards with a top layer of turf. The tree then is somewhat checked in its growth, it throws out an abundance of small fibres into the ball of earth containing the roots, and is the next season transplanted with great ease and safety.

The proper size for transplanting varies somewhat with the sort of tree and the kind of culture intended. It is, however, a maxim equally well settled, both among theorists and the best practical men, that health, immediate vigor, and duration, are all greatly promoted by transplanting fruit trees of small size—from three to six or seven feet. We are fully aware with what impatience the beginner, or a person who knows little of the culture of trees, looks upon trees of this size—one who is eager to plant an orchard, and stock a garden with large trees, thinking to *gather a crop the next year*. The latter may indeed be done, but the transplanting so affects the tree, that its first scanty crop is followed by a long season of rest and feeble growth, while the plantation of young trees is making wood rapidly, and soon comes into a healthy and long-continued state of productiveness—often long indeed before the large trees have fairly arrived at that condition. The small tree, transplanted with its system of roots and branches entire, suffers little or no check; the older and larger tree, losing part of its roots, requires several years to resume its former vigor. The constitution of the small tree is healthy and unimpaired; that of the large is frequently much enfeebled. A stout and vigorous habit—what the nurserymen call a *good stocky plant*—is the true criterion of merit in selecting fruit trees for transplanting.

Trees intended for orchards, being often more exposed than those in gardens, should be somewhat larger—not less than six, or more than eight feet is the best size. For gardens, all experienced cultivators agree that a smaller size is preferable; we prefer plants two years old from the graft. Most gardeners abroad, when they select trees with more than usual care, take what are called maiden plants—those one year old from the graft, and there can be no doubt that, taking into account health, duration, and the ease with which such a tree can be made to grow into any form, this is truly the preferable size for removal into a fruit garden. But we are an impatient people, and it is not till after another century of trial and experience in the culture of fruit trees, that cultivators generally in this country will become aware of the truth of this fact.

The facility with which the different fruit trees may be transplanted differs considerably. Plums are generally removed with most success, and after them nearly in the order as follows: quinces, apples, pears, peaches, nectarines, apricots, and cherries; the latter succeeding with some difficulty when of large size.

In planting an orchard, always avoid placing the trees in the same spot or near where an old tree stood before. Experience has taught us that the growth of a young tree, in such a position, is weak and feeble; the nourishment suitable to that kind of tree having already been exhausted by a previous growth, and the soil being half filled with old and decayed roots, which are detrimental to the health of the young tree.

Too much Work.

PEOPLE do not have relaxation enough in New England. They too generally have a care-worn expression, from infancy to age; and the fact cannot be denied, that anxiety is weariness to the flesh. We are all utilitarians in this country, especially in the Northern States, hardly affording ourselves opportunity for eating or sleeping, in the manner which nature demands—for she can only conduct her chemical operations properly, and re-adjust the deranged vital machinery, while we are quietly slumbering. We recruit ourselves and grow fat during a refreshing nap—but exhaust the system, both physically and mentally, in pursuing to excess the ordinary round of every-day business. "All work and no play, make Jack a dull boy," is a proverb based on a profound knowledge of the laws of our being.

Females in New England, are worse off than the other sex in the deprivation of out-of-door relaxation, as custom has made it vulgar to breathe the fresh air, unless it is done in a very lady-like manner. Hence they make feeble mothers—look thin, sallow, lank, and die prematurely, of diseases that never would have been developed had there been less education of the mind, and more of the body, in girlhood.

A sad mistake is produced by a too implicit belief in the adage that "time is money," since the first object of pursuit is in consequence, made to be cash. Those who attempt to rest reasonably from their labours, at proper periods, are either afraid of not having enough, or are perpetually reminded that idleness ends in want. So the shuttle flies faster than it ought to go; the farmer cheats himself out of all that is worth having, health, by denying himself and his boys a holiday, because time is money and exam-

ple is everything. We work too much and too long in New England. Not farmers only, but mechanics also.—*Medical Journal.*

The British Grain Crops.

A *warren* in the London Times has compiled the following estimate of deficiency in the grain crops of Great Britain, for the year ending Sept. 1st, 1847:

	Quarters.
Ordinary annual deficiency,	2,000,000
Loss of potatoes in Ireland, value £12,000,000, to be supplied by grain—a food of double the cost of potatoes—value £24,000,000, representing, at 50s. per quarter,	9,600,000
Loss of oats in Ireland stated by Mr. Labouchere to be one-third the crop, or	5,227,000
Loss of potatoes in England and Scotland, say one-tenth only the loss in Ireland, or	1,000,000
Loss of oats in Scotland and England,	1,000,000
Loss of barley in the United Kingdom,	1,060,000
Extra seed for increased cultivation of grain,	360,000
Extra consumption of railway labourers,	360,000
	20,627,000
Deduct economies made by starvation and non-feeding of pigs,	4,627,000
Total deficiency,	16,000,000

Money value of the deficiency at £3 per quarter, £48,000,000, or more than \$206,000,000.

INCOMBUSTIBLE WASH.—Slack stone lime in a large tub or barrel, with boiling water, covering the tub or barrel, to keep in all the steam. When thus slacked, pass six quarts of it through a fine sieve. It will then be in a state of fine flour. Now, to six quarts of this lime, add one quart of rock or Turk's Island salt, and one gallon of water, then boil the mixture and skim it clean. To every five gallons of this skimmed mixture, add one pound of alum, half pound of coppers, by slow degrees add three-fourths of a pound of potash, and four quarts of fine sand or hickory ashes sifted. We suppose any kind of good hard wood ashes will answer as well as hickory. This mixture will now admit of any colouring matter you please, and may be applied with a brush. It looks better than paint, and is as durable as

slate. It will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling upon it. When laid upon brick work it renders the brick impervious to rain or wet.—*Farmers' Register.*

From the Pennsylvania Enquirer.

Measurement of Grain, &c.

We are indebted to Mr. E. Street, for the annexed statement of the amount of grain, &c., measured at Philadelphia during the first quarter of 1847—to which we have added the amount measured during the same period of the year 1846.

The number of bushels of grain, salt, and coal, measured—that came under my notice—for the first quarter of the year 1847:

	1847.	1846.
Corn,	338,297	62,512
Wheat,	57,795	11,756
Rye,	3,777	2,860
Beans,	70	1,014
Oats,	63,935	8,557
Barley,	4,538	56
Seeds,	1,910	2,843
Salt,	10,500	
Coal,	5,835	

EML. STREET,
Head Measurer of the Port of Philadelphia.

Hybrid China Roses.

Rosa Indica hybrida.—The superior varieties of this fine division give a combination of all that is or can be beautiful in roses; for, not only are their flowers of the most elegant forms and colours, their foliage of extreme luxuriance, but their branches are so vigorous and graceful, that perhaps no plant presents such a mass of beauty as a finely grown hybrid China rose in full bloom. They owe their origin to the China, Tea-scented, Noisette, and Bourbon roses, fertilized with the French, Provence, and other summer roses, and also to the latter crossed with the former; the seeds of such impregnated flowers producing Hybrid China roses. These have, in many cases, resulted from accident, but latterly from the regular fertilizing process, as mules or hybrids have been raised from well known parents.

In England, but a few varieties have been originated; as the common China rose does not in general ripen its seeds sufficiently for germination. The parents of Brown's Superb Blush, which is an English hybrid, was the old Tea-scented rose, *Rosa indica odorata*, impregnated with some hardy summer rose. River's George the Fourth is also an English rose: but as this came by accident,

its origin is not so well ascertained. *Rosa Blairii* is also English, and raised from the Yellow China, impregnated with some variety of hardy rose. All these roses have the true characters of the family: leaves smooth, glossy, and sub-evergreen; branches long, luxuriant, and flexible. They give a long continuance of bloom, but they never put forth secondary or autumnal flowers, except in a few insulated cases. This is a most peculiarly distinguishing trait, and an interesting fact. Impregnate a Bourbon, China, or Noisette rose,—all abundant autumnal bloomers, with the farina of a French or a Provence rose, and you entirely take away the tendency to autumnal blooming in the offspring. They will grow vigorously all the autumn, and give a long, but not a secondary series of flowers. Some of these Hybrid China roses produce seed abundantly, which is rather a remarkable feature, as so few hybrid plants are fertile. It has been asserted that hybrids produced from the French rose, impregnated with the China rose, are not of such robust and vigorous habits as when the China rose is the female parent; but this is an assertion scarcely borne out by facts, for the exceptions are numerous, and like many other variations in roses and plants in general, they seem to bid defiance to systematic rules. By scientific cultivators the roses of this division have been divided into four classes, Hybrid China, Hybrid Noisette, Hybrid Bourbon, and Uncertain Hybrids.

Those that have been raised from Noisette roses have a tendency to produce their flowers in clusters; those from Bourbon roses have their leaves thick, leathery, and round; those from the Tea-scented have a delicate and grateful scent; but all have those distinguishing family traits as before given, and accordingly they group beautifully. It is a difficult task to point out the best in each of these divisions, as they are nearly all well deserving of cultivation. However, by making a few remarks, such as cannot so well be given in a descriptive catalogue, I may perhaps be able in some measure, to direct the choice of amateurs to those worthy their notice.—*Prince's Manual of Roses.*

Address,

Delivered by J. S. SKINNER, Editor of the Farmers' Library, at Northampton, Mass., in the Tenth month last, at the request of the Franklin and Hampden Agricultural Societies.

We publish with pleasure the following extract, and commend it to the attention of those who may be immediately interested, and who have influence to give

a tone to public feeling. We know very well that when scientific instruction is spoken of, in reference to the lad who is to earn his livelihood on a farm, we are too generally told, that an efficient education can only be attained by taking off his coat and going directly to the plough, and to every other exercise of the plantation. The truth of this in part, must be admitted. We are aware that a man will not be likely to farm profitably, whose only qualification is sound theory; he must have practical knowledge:—yet all this is consistent with an education—a training especially adapted to his future calling. This is what is aimed at by our indefatigable and worthy friend of the *Farmers' Library*. James Gowen's proposed College—see page 243, current vol. of *Cabinet*—will, to a certain extent, supply a serious vacancy, but the idea suggested below, is to open avenues for agricultural instruction in every direction, and to all classes.—Ed.

EXTRACT.

My friends, if you will allow me to speak frankly and without reserve, as becomes a friend, who has devoted the best years of his life in the study of how he could best assert the rights and elevate the cause of American agriculture, I will tell you in what I think consists the great impediment to the progress of your profession; and by that I mean the obstacle which stands in the way of your practically realizing double your present crops from the same land, and with less labour. It lies in a deficient and ill digested system of education! I mean in the general way, that too many farmers are content with an education, or what is called an education, that confers merely the power of *reading, writing, and cyphering*—without reflecting that these of themselves do not constitute learning or information in the science of farming, or any other science, any more than the possession of a square and compass, a drawing-knife and a jack plane, gives a knowledge of house-building. Reading, writing, and arithmetic, are nothing more than the tools to work with! You might as well expect a man to cure, without any knowledge of the healing art, the most deadly malady, by putting the whole contents of an apothecary's shop into his hands, as your son to profit in the art of farming merely by a knowledge of reading, writing, and arithmetic.

Will a knowledge of these of themselves, instruct your son in the nature of the soil out of which he is to get his living—its composition or mechanical or chemical properties? Does this knowledge, of itself, and without using it as the means of extending his researches, let him into a knowledge of the properties of vegetables—of what they are composed, by what they are nourished, and the laws of their organization and existence? In which of the schools, let me ask

you, are your sons, who are going to follow your pursuit, educated in the knowledge of the nutritive properties of the various kinds of food, and their positive or comparative effect on the animal constitution, and the circumstances and conditions on which depend their growth and their health, either of the beasts themselves or the plants on which they live? Why the pursuit in which you propose your sons to embark, is in its very nature an art as well as a science. The farm is in fact a great manufactory; the basis of the machinery is the land, requiring to be repaired, and oiled, and kept in order, with seed, and manure, and air, and water, and the various elements that earth and air contain, with labourers for operatives, and all to be directed with more or less effect, according to the experience and skill of the *watchful and accomplished superintendent over all*. The difference between it and other great chemical, or other complicated machinery and laboratories is, that some turn out soap, some oil, some glass, some linen or woollen cloth, some nauseous drugs, while yours turns out the staff of life, without which all others would starve. In behalf, then, of your own sons, I appeal to you if it be fair in those who can afford it, to withhold, at least from such of them as are to live by this most beneficial of all arts, a knowledge of the chemical elements to be found in the soil, in the air, in the water, and in the animal and vegetable and mineral kingdoms, with all which they have every day to deal? If it be easy to find, even in time of profound peace, for the last quarter of a century, some fifteen millions annually, for the warlike use and machinery of this Republican Government, cannot one million, at least, be found for the construction, at the seats of all the State Governments,—or as an appendage to the Smithsonian Institute at Washington—of laboratories where practical instruction might be given to men who, after a few years, might go forth into every county in every State of this Union, and teach practically to the rising generation of farmers the various methods of analyzing minerals, and manures, and soils, and the methods of detecting the materials taken from the soils by the removal of the crops. Are you aware of what is doing in our mother country on this subject—that country from which we have derived our knowledge of the principles of liberty and our advancement in the arts—that country whose wonderful progress in agriculture and manufactures is based on her proficiency in the sciences I have been so feebly recommending to be taught in all our schools? Why, such has been of late years the movement

made in sciences connected with and contributory to the progress of agriculture, that Professor Johnston, the great agricultural chemist, in a recent lecture, refers to a particular field of 100 acres of land which had, to use his own language, by *application of an improved system of farming and the proper application of manures*, been brought in twelve years from an average product of 50 bushels of oats up to 85 bushels per acre; and in Norfolk, England, according to one of those masterly prize essays elicited lately by the wise measures of the Royal Agricultural Society, and which are transferred to the Farmers' Library, a large district of fen or boggy land, has been recently so immensely improved, that some parts which not many years ago were considered worth not more than \$35 an acre, have been sold within the last five years at \$225; while others which, says the author of this elaborate essay on Norfolk agriculture, were offered for a gallon of beer, have sold for nearly \$200 an acre.

Again, then, I repeat, you must overhaul and amend your systems of education. Why should they remain stationary, while everything around is advancing with railroad velocity? Let us worship knowledge as we now worship power, until knowledge and power become truly, as they ought to be, synonymous. Pay to benefactors of industrial pursuits the court you now pay to party demagogues; exalt inventors in the useful arts as you now exalt small men into high places; pay and glorify thorough-bred scientific instructors as you now pay and glorify the military, and you will see the whole mass of agricultural population rising from the ground with increased vigor of intellect, as the languishing fields revive after a genial shower, and with an understanding of their rights, which will impart a strength to maintain them beyond the strength of ten thousand armies, and with a capacity to prosecute their business and augment the products of the earth as much above the mere efficacy of strong arms or brute force, as mind is above matter, and all other powers short of the powers of the Supreme Being. But remember the species of education, the sort of embellishment which is now needed to keep your interests and pursuits in a line with the advancement of every class and every interest around you, does not consist—and I cannot too often repeat it—in learning merely to *read, write, and cypher*, just as all New England has a right to boast of imparting that to all her children, but with which it is apprehended they are too generally contented. These are to be valued only as a means to an end—as step-

ping-stones to knowledge—to be prized for what they are worth, but not to be confounded with knowledge itself. Oh, that I could prevail upon the farmers of the United States, on patriots of all parties, to unite and lay their heads together and their shoulders to the wheel on this great subject of agricultural education, as with all my heart I have been labouring thirty years to do, and am now doing, with more earnestness and more hope than ever, through the pages of *THE FARMERS' LIBRARY*! a work in which the publishers give me full swing, and place at my command the best materials that money can procure, or art illustrate in any country—a work which, with such materials and a passion for the subject, I may venture to say as the friend of agriculture, not of yesterday or to-day, but of my whole life time, and without fearing the imputation of selfish or mercenary motives, *ought to be placed in the hands of every American landholder, and more especially in the hands of every youth whose destiny is to live by the cultivation of the earth.*

Were it possible to command for this subject of agricultural education, half the time and attention which are given to party politics, were it possible to compel an appropriation to it of one-tenth that is expended for commercial and warlike purposes, who dare say what would be the benefits resulting to the great interests of the country and of mankind, even in the lifetime of some who hear me? Remember, you who have power to control public sentiment and direct it in the right way, that as you value the character of your sons and the existence of your government, you must enlighten the mass of agriculturists. In a few years we shall have fifty millions of people. Few are aware of the geometrical ratio by which our population is increasing, and how much the agency of steam, were it only by saving the time of millions in travelling and enabling them to employ in productive industry and in creating the means of subsistence, the time that would otherwise be unproductively employed in travelling; few, I say, are aware how wonderfully in this way steam itself has become an augmenter of population, by augmenting throughout the world the means of subsistence on which the increase of population depends. Now, is any problem so fit to engage the head and heart of the statesman and the philanthropist, as the question, how can this great forthcoming mass of human beings be best employed and fitted to make the most of their faculties, and to enjoy the blessings of liberty? For myself, my anxiety is, as it has ever been, for the agriculturist—for the

tillers of the soil. Enlighten them; keep them sound and virtuous, and you have the best security that human foresight can desire or establish. Let them, on the contrary, be steeped in ignorance, and its invariable concomitant, liability to corruption and corrupt uses, and you lay the axe at the root of all that is worthy to engage the solicitude and anxieties of the statesman and patriot. The very greatness of your numbers, which, if instructed, would contribute to your national strength, will accelerate the catastrophe of ignorant and populous nations, throwing up their greasy caps and crying hosannas at the moment of falling the miserable victims to the arts of the demagogue, who always flatters the people while he places the sword in the hands of the despot to enslave them.

Finally, let me exhort you to bear in mind that all plans of reform in reference to this first of all earthly concerns, the education of your children, should equally embrace the appropriate education of your daughters as your sons. As the forward movement of civilization, nay, of liberty itself, has been everywhere attended with improvements in agriculture and in all the social arts and amenities of life, so has it been equally marked by more and more attention to the female sex, and a higher appreciation of the noble office of housewife and mother in every domestic circle. That office of which it was quaintly written three hundred years ago,

"Though husbandry seemeth to bring in the gains,
Yet husewifery labours seem equal in pains;
Some respite to husbands weather may send,
But husewife affairs have never an end."

But for her, where should we get all our household comforts? What stimulus should we have to cultivate the refinements of life? Why, even in the healing art, her offices are indispensable to raise the head and cheer the drooping spirits of the desponding invalid. Her tender accents and soothing gentleness can minister even to "a mind diseased." So important are her duties and so inimitable her tact in the chamber of sickness, that Doctor Rush being once asked how much the average duration of human life had been increased by the Faculty, answered that it depended on whether the inquirer meant to include old women nurses among the Faculty, because, if they were excluded, the increase had been of little account. But, my friends, earnest, careful attention to female education, is your bounden duty in a much higher sense, and for yet more important considerations. For, after all, is it not by the mother that the first impress is given to the character of the son, as the clay takes its form from

the hands of the potter? It is from her it may be said to *take its set*. Hence the mutual and reflective influence between her and the state of society in all ages. How important, then, to agriculture, regarded as I have endeavoured to present it, as a fit exercise for the mind as well as the body, that daughters who are to be the future mothers of the Republic, should have some insight into botany and natural history, and whatever may fall within the comprehension of their children until they leave the paternal roof, that they may be early inculcated with a love of floriculture and horticulture, and all the elementary branches of agricultural literature, and so be taught

To make a meditative joy, and find
Religious meaning in the forms of nature.

On the best Mode of Feeding Cattle.

By PROFESSOR JOHNSTON.

THE following is the substance of a lecture delivered at Inverness, before the Highland Society of Scotland. After a few preliminary observations, the lecturer observed:

That he appeared before the meeting as the representative of the Agricultural Chemistry Association of Scotland. They had all heard of that Association, and many of them were members of it. The object of the Association in having this meeting was two-fold. Every one, acquainted with the state of agriculture in different parts of Great Britain, cannot have failed to observe certain practices in operation, in various parts, of which agriculturists in general might profitably avail themselves. By going into different counties, they found practical men possessed of knowledge, the diffusion of which would be of the greatest possible advantage to the general mass of the agricultural community. Now, the purpose the Agricultural Chemistry Association had in view—in connection with these general observations—was to collect all the information in their power, through their officers or organs, or through meetings such as this; and having collected that knowledge, their next great object is to diffuse it in such a way as to be productive of the most beneficial results to agriculture in general. Like scattering seed through their fields, the diffusion of that knowledge would produce vegetation in spring, and fruit in autumn, and the more liberal the deposit, the more abundant the return. They were here met together, consequently, in possession of a mass of knowledge in regard to the objects of the Association, so that the agriculturists present might aid them in the diffusion of knowledge.

In selecting topics for discussion at these meetings, they looked at the character of the country, and inquired of practical men in the district, what topics were best suited for the purpose of affording useful information; and as the question of the use of prepared food for cattle was one of very general interest in this as well as in other parts of the country, it was to form the first subject of this morning's conversation. The second subject, on the other hand, being one rather pastoral than agricultural, had a direct bearing upon questions of great interest to the farmers of Southerlandshire, and in other districts around Inverness; and in this respect was peculiarly appropriate. In reference to the first question—the feeding of cattle—no district in the island was more interested than this. He could not tell them how much stock was shipped from Inverness last year, but he trusted Dr. Nicol, or some other gentleman, would be able to furnish them with information on the subject. He believed, however, it was to a very large amount indeed; and he had no doubt but it was increased since, by the greater facilities of communication with the London and other markets. As a cattle importing district therefore, the extension of sound information in regard to the economical use of food, must be of the very greatest importance; that is, in what way they could grow the greatest amount of beef or mutton at the least possible expense. This he was prepared to show was to be effected by the use of certain mixed food, and prepared food. An individual going from one end of the country to another to observe the state of agriculture, will look not merely at the kind of stock, but he will more particularly observe the implements of husbandry in use throughout the various districts. In order therefore, to form an estimate of the degree of attention paid to this matter of prepared food in England, on his visit to Newcastle, at the great cattle-show recently held there, he turned his attention particularly to the examination of the implements exhibited, having a bearing upon this point. Amongst these he found chaff-cutters, a peculiar machine for crushing corn and other seeds, and other instruments; all showing how much regard was being paid to this subject by practical men. There was no doubt but that the subject of the quantity of food which cattle require to produce a certain weight of beef, was beginning to attract general attention; but before he entered upon the few points which he meant to notice in connection with this question, perhaps it would be necessary to explain shortly the general composition of food. In all

kinds of bread there were contained three different kinds of matter. First of all there was a certain quantity of fat, which the butter they ate represented; secondly, there was a certain amount of sugar; and then there was besides, the third constituent, which was represented by the white of an egg. Now it was of the very greatest importance what description of food was used, and what proportion it contained of these three kinds of matter, as bearing upon the purpose it was intended to serve. Cattle had in their bodies different kinds of matter, also, but particularly flesh and fat; and the farmer should be sufficiently acquainted with the nature of food, to be able to distinguish what he should use when he wished to produce fat, or when he wished to produce fat and lean both together; and the food which was given would effect the one or the other of these purposes, according to its composition. The white of an egg or albumen would supply nothing, or nearly so, to the animal but muscle. The fat went directly to form fat. The starch in food kept the body warm, and when fat was wanted served the purpose of making the oily matter more readily become fat in the body of the animal.

Now, in fattening cattle, as in everything else, using the proper means produced the proper effects; and after the explanation which he had given, they would see at once that a mixture of food was better than the use of one kind alone. If they wanted to lay on muscle, they would feed with food containing the largest amount of gluten; and if they wanted to lay on the fat, they would give starch and oily substances, and only a small proportion of the other ingredient. Selecting food in any other way would not serve the purpose they had in view in the most economical way. He had a table representing the different proportions of fat in the food which they were in the habit of using; but he would illustrate what he had to say by a few simple illustrations. Wheat contained two per cent. of fat, and sometimes a little more; but oats contained sometimes from four to five per cent., or about double the amount which was to be found in wheat. Oats were next to Indian corn in this respect, the latter of which they were aware contained a large amount of fat. Gluten was the matter out of which the muscle was produced, and there was more of that substance in the bean or the pea, than in the oat; but the oat was better than wheat. But there was another kind of food used for fattening cattle, namely, oil-cake, which contained a greater amount of fat than the same weight of any other kind of grain. Linseed, from which oil-cake is

made, differed from other descriptions of grain, in containing a greater amount of fat, and a larger amount of gluten likewise, with the exception of the bean. Now, practical men have derived great advantage from feeding their cattle on oil seeds; that food, from the peculiarity of its composition, laying on fat and muscle at the same time. Oil-cake, however, was the best food, only when the greatest amount of fat was required; and according to the purpose which they had in view, farmers would give their cattle other descriptions of food. It was a remarkable circumstance, that the bean and pea contained very little fat, and as the wheels of the animal system required to be greased, these kinds of grain would not serve for that purpose, although they contained what made muscle. Although beans and peas were good food, therefore, they were not good as the sole food of animals. Besides, they would observe, that from their different constituents, plenty of oil seeds, and plenty of beans and peas, would be far more profitable than if they were to give either of them singly. That was the principle upon which the use of mixed food was founded—to give all the substances the animal required, and to give them at the cheapest rate; and the researches of the scientific man were directed to discovering the means by which these objects could be best accomplished. He had selected oil seeds, but he might have taken potatoes or turnips for his illustration. He had taken the oil seeds, however, because very great attention had been recently directed to the value of those seeds in the feeding of stock, and to the culture of flax, which they knew was advancing with great rapidity in the neighbouring country of Ireland, and which was even progressing in England at a great rate. He might mention a remarkable fact connected with the improvement of the flax cultivation in Ireland, that a society which was established for the encouragement of that cultivation, and which had its seat in Belfast, had an annual revenue of between £2,000 and £3,000; while the income of the Royal Agricultural Association of Ireland was less than one-half of that sum. From the progress the cultivation of flax was making in Ireland, it was very deserving of attention by those who thought a change in the rotation of crops would be useful in other parts of the country. The person who had most directed his attention, practically, to the effects of feeding stock with mixed food, and to feeding on linseed, was Mr. Warnes, of Framlingham, Norfolk, and he (Professor J.) would point out to them the principles on which he proceeded;

and they were sound scientific principles. He commenced by boiling the linseed in water until it formed a kind of jelly; then he stirred in a quantity of cut straw and chaff, and crushed corn. The mixture was then poured into moulds, and afterwards served to the cattle warm, which they liked remarkably well. With this food the cattle thrived, and acquired beef in an extraordinary manner. By this system of feeding, Mr. Warnes said he could compete with any man, whether foreigner or not, as he could send cattle to Smithfield for 4½d. per lb., and pay him an ample return; and in illustration of this, he gives the results of two experiments, which he would read to the meeting, and which were as follows:

Since he followed out box-feeding, he knew not a single instance where he had not realized £8 for every head of cattle he had kept for six months. At the farm where he now resided, he had reared for market the following cattle, after only six months' box-feeding:

7 Durham steers, cost £8 10s. each,	
sold for £19 10s. each,	£77 0 0
6 Scotch steers cost £8 10s. each,	
sold for £22 10s. each,	84 0 0
1 Cow cost £5 5s. sold for £15,	9 15 0
4 Scotch steers cost £10 each, sold	
for £20 each,	40 0 0
	£210 15 0

The above cattle were bought in and disposed of within six months. They consumed, with the following now in herd, nineteen acres of turnips, about fourteen quarters of linseed, and a few bushels of barley-meal, with several acres of pea-straw:

3 Durham heifers, estimated value	
above the cost price,	£22 10 0
2 Irish steers,	13 0 0
5 Small steers and heifers,	30 0 0
3 Calves, and butter from two	
cows,	11 0 0
	£76 10 0
Deduct for 14 quarters of lin-	
seed, mostly grown upon the	
farm, £35, also for barley, £4,	39 0 0
	£37 10 0

In reference to Mr. Warnes's experiments, too, it is to be observed that the value of the manure was very much increased in comparison with that derived from the ordinary method of feeding. But, besides this, there was another method of feeding of which he would speak from personal observation, and which he had witnessed in the neighbour-

hood of Northallerton. He went to that place because he had heard that Mr. Marshall was keeping double the amount of stock, with the same quantity of turnips, that he had been in the habit of doing only two years ago; the other food used being ground oats, barley, rye, and old beans, and chopped hay, instead of straw at times; but the cattle did best with the straw. Hearing, as he had stated, that Mr. Marshall kept double the stock upon the same amount of turnips, by his system of feeding, he—Professor Johnston—was very anxious to see the mode of carrying his system into operation, and went down to Yorkshire for that purpose. There he saw about 200 head of cattle feeding, a portion of which was sold off every week, and their places supplied by others. What struck him as very remarkable, was the state of absolute rest in which he found the cattle. There was not a single beast upon its legs; no motion was observed, which, they were aware, was a circumstance favourable for fattening. In connection with this subject he got the following information, and in order that they might fully understand it, he would present it in a tabular form. It was as follows:

Linseed, 2 lbs., boiled for three hours in four gallons of water; cut straw, 10 lbs.; growing corn, 5 lbs.; mixed with jelly. To be given in two messes, alternately with two feeds of Swedes. Now, the mode in which the linseed was boiled, was of considerable consequence. In the first place it was boiled for three hours. The jelly was then poured upon crushed grain and cut straw, much in the same manner in which a man made mortar, being mixed together with a shovel and allowed to stand for an hour. It was then stirred again, and after a lapse of two hours it was given to the cattle in a hot state, and the result was, that if the animals are fed regularly on this kind of food and turnips alternately, they remain in a state of extraordinary quiet. They become exceedingly fond of it, and commence bellowing whenever they hear their neighbours being served before themselves. The practice was to give them a meal of the linseed mixture at six in the morning, turnips at ten, another mess of linseed in the afternoon, and turnips again in the evening. When he saw them first in the morning, it was after they had got their mess, and he was much astonished to see them, on visiting them on the second occasion, when they were all on the *qui vive* for their meal. Two things were to be observed in regard to this system of feeding—first, that it consisted, in addition to turnips, of a mixture of grain, straw and linseed in certain quantities, given

hot; and the result was double the amount of stock kept on the same amount of land. The proportion of turnips which could be grown upon a farm, usually determined the amount of stock a man might keep; and if by an improvement in the system of feeding, the quantity of cattle could be doubled, by turning the money twice instead of once within a year, the farmer would obtain double the profit. But this was not the only advantage; he would double the manure which he made at the same time, which would contribute very much to the fertility of his land; he being enabled, by the use of this linseed, to return more than he took out of it. The proportion of the food had other important consequences in regard to manuring the soil. The crushing of the grain and seeds, by reducing them to the minutest particles, made the substances of which they were composed more easily assimilated to the food of plants, and made it better manure, because of the extreme division which it had undergone. Now they would observe that, by having this large additional amount of manure, they would get larger crops, and introduce a system which would go on annually increasing the amount of their produce, and consequently the amount of their profits. This would enable them to farm higher, and by farming high, they would keep that place which, he was sure, they now occupied in the history of the world. He would likewise direct their attention to the use of lin-

seed, and the preparation of food, as being of great value in keeping working animals in good condition; but on this point he would not detain them by giving a special detail of facts, as the same general principles applied in the one case which applied in the other. As he had occupied the attention of the meeting at considerable length, he would conclude for the present, reserving any additional remarks which he had to make, and the replies to any questions which the company might think he could usefully answer, until after the general discussion had ended.—*American Journal of Agriculture and Science.*

Anthracite Coal.

The following table shows the quantity of Anthracite Coal sent to market from the different regions in Pennsylvania, from the commencement of the trade in 1820 to 1846, inclusive; with the annual increase, consumption, &c. [From the annual official statements published by the Pottsville Miners' Journal.]

Coal and Iron are becoming, if indeed they have not already become, the great staples of Pennsylvania; and we think it needs no apology for inserting the following table,—developing as it does, such extraordinary facts—in an Agricultural Journal.—Ea.

YEARS.	Schuylkill.	Lehigh.	Lackawanna.	Pine Grove.	Shamokin.	Wilkes-barre.	Aggregate.	Annual Increase.	Consumption.	Unsold April 1.	Sold on Canal & R. R.
1820		365					365				
1821		1,073					1,073				
1822		2,240					2,240				
1823		5,823					5,823				
1824		9,541					9,541				
1825	6,500	28,393					34,893	25,352			
1826	16,767	31,280					44,047	13,154			
1827	31,360	32,074					63,434	15,837			3,154
1828	47,284	30,232					77,516	14,082			3,372
1829	79,973	25,110	7,000				112,083	34,567			3,332
1830	89,984	41,750	43,000				174,734	62,651			5,321
1831	81,854	40,966	54,000				176,820	2,086	177,000		6,130
1832	209,371	70,000	84,600				363,971	187,051	298,871	None.	10,049
1833	252,971	123,000	111,777				487,748	123,777	434,986	65,000	13,429
1834	226,692	106,244	43,700				376,636	Dec.	415,186	117,762	19,429
1835	339,508	131,250	90,000				560,758	184,122	635,935	79,212	18,571
1836	432,045	146,522	103,861				682,428	121,670	632,428	4,035	17,863
1837	523,152	225,937	115,387	17,000			881,476	199,048	680,441	54,035	21,749
1838	433,875	214,211	78,907	13,000			739,993	Dec.	788,968	255,070	28,775
1839	442,608	221,850	122,300	20,639	11,930		819,327	80,034	867,000	305,395	30,290
1840	452,291	225,288	148,470	23,860	15,505		865,414	46,087	973,136	157,622	28,924
1841	584,692	142,821	192,970	17,653	11,463		958,899	93,485	958,899	100,000	41,223
1842	540,892	272,139	205,253	32,381	10,000	47,346	1,108,001	149,102	1,158,001	100,000	40,384
1843	677,285	267,734	227,605	22,965	10,000	58,000	1,263,539	155,538	1,263,539	50,000	34,619
1844	839,934	377,821	251,005	34,916	13,087	114,906	1,631,669	368,130	1,631,669	50,000	60,000
1845	1,083,796	429,492	273,435	47,928	10,000	178,401	2,023,032	391,383	2,023,032	50,000	90,000
1846	1,237,004	522,989	320,000	58,926	12,572	192,403	2,343,992	320,940		50,000	125,000
	8,629,746	3,726,135	2,468,870	289,208	94,557	591,156	15,811,204				

The Six best Apples for the Climate of Boston.

THE following remarks are made by B. V. French, and we take them from *Downing's Horticulturist*. The editor says the writer "is acknowledged to be the best cultivator of the apple in the neighbourhood of Boston. The selection he recommends, is based entirely on his own practical observations; and we believe he cultivates in the orchards on his estate at Braintree, a larger collection than any amateur in Massachusetts."

To a person whose grounds are limited, and who must, of course, restrict his variety accordingly; it is important that he should make his choice understandingly, and most advantageously. It may be, that the best six varieties in the vicinity of Boston, may not prove the very best in that of Philadelphia.—Ed.

In recommending the six best apples for New England culture, I must, of course, be understood to be confined to this number of trees. Where a larger space and greater variety is permitted, several varieties of high merit would certainly be added. In selecting so small a number, you will understand me to bear in mind such qualities of regular productiveness, fair habit of growth and adaptation to our climate, as make a given variety a constant favourite with the cultivator.

I have also kept in view a succession of fruit for the table and kitchen, so as to serve as a continual supply from midsummer till the succeeding spring.

1st. *Early Harvest*.—For the best early apple worth cultivating, I should name the Early Harvest. The tree, with me, is a free grower, healthy, a profuse bearer, and the fruit hangs well. It ripens the last of July. The fruit is of medium size, roundish, rather flat, and if used when not quite ripe, it is one of the most excellent for pies, tarts, and cooking generally; and when fully ripened on the trees, it becomes of a fine rich yellow, and ranks high as a table fruit.

2nd. *The Porter*.—In succession this excellent fruit follows the Early Harvest; it is also a free growing tree, and a great bearer. The fruit is conical-oblong, yellow; the skin is beautifully smooth and fair, and when fully ripened in the sun, has a fine blush. It is excellent for the table or for cooking, and if properly taken care of, will keep from the time of its ripening early in September, till the middle of October. The many good qualities of this native fruit have made it one of our greatest favourites.

3rd. *Fameuse*.—I know of no apple to take the place of the Fameuse for the table at this season. It is in eating from the mid-

dle of October, and with care, continues so till February. The tree, with me, is small in size, and a medium bearer; the fruit is of medium size, flat; the skin is red, smooth, and takes a high polish; the flesh is very white, juicy, and, I think, in flavour, excels all others for table use, from the time the Porter is gone till the Rhode Island Greening comes into use.

4th. *The Rhode Island Greening*.—The tree is a strong, hardy and free grower, and a great bearer. The fruit is flattened, of a yellowish green, with a dull blush. The flesh is tender, juicy, and of fine flavour for cooking or the table. This fruit is in use from September till February, and is fine for the table in November and December. It is too well known and esteemed to need any description of mine, having a prominent place in every good orchard.

5th.—*White Seekno further*.—This excellent fruit, I am informed, originated in the garden of the late William Prince, Esq., of Flushing. In point of fine flavour, it excels all other apples that I have eaten. The tree is of medium growth, of a leaning habit, a full bearer every other year. The fruit is rather oblong, greenish with dark spots; and is not a very fair or sightly fruit. Its season is January and February. Its flesh is very juicy, tender, and fine flavoured. This variety is not much known in New England; in fact, I know of but three bearing trees.

6th. *Baldwin*.—This, our most popular New England apple, is the universal favourite as a late winter fruit. Its hardy, healthy habit as a tree, and the heavy and regular crops it bears, together with its fine flavour, render it indispensable here in every orchard.

For the Farmers' Cabinet.

Brick Making.

DURING the past winter I spent a few weeks in the city and State of New York, and I returned to New Castle county strongly impressed with the opinion, that it is superior to any place I have seen during my sojourn in New York, for cheap lands easy of culture, good roads, and convenience to market. If we had more of the capital, industry, and *go ahead*, of the North, this county would be the garden spot of America in a few years, with our many natural advantages, having no State tax to pay the interest on annually, or to repudiate, as some of the States have done, to their discredit and disgrace.

While in the county of Rockland, N. Y., I visited several brick yards on the Hudson

* Or *Pomme de Nègre*, London Hort. Soc. Cat., and *Downing's Fruit and Fruit Trees*.

river, where I learned they made very good common bricks, well burned, which were sold at a profit, at \$2 50 to \$3 per thousand, at the different landings on the Hudson river, in Haverstraw township. The advantage of making, drying and burning, is very great over the Delaware mode, as the market price fully proves. The New York price is \$2 50 to \$3 per M.; our price is \$6 to \$7 per M. A vast saving might therefore be made, to the citizens of Pennsylvania, Delaware and Maryland, by introducing the New York method of making, drying and burning common brick—well suited for building common houses, barns, walling wells, paving, &c. The bricks are thoroughly burned, and are not the soft, inferior, raw brick we often get, unfit for building purposes. Now as wood is getting scarce, and high prices are paid for building materials, which are often inferior and at best short lived, it appears to me of great importance to the farmers and others to have a supply of cheap brick, as a substitute, for wooden buildings. I call the attention of the agriculturist and the public to the cheap method mentioned above. They use horses, or a steam engine, to prepare the clay and mould the bricks; steam is preferable on a large scale. The off bearer carries, I believe, six bricks at a time, instead of one, as with us, from the mould—they are laid on a yard under roof; the roof can be raised at pleasure to let in the sun to dry the bricks, and let down again, in case of a shower of rain—so they have no washed bricks at any time. In mixing the clay for the mould, fine coal is mixed with the clay, in proper proportion to burn them thoroughly. The kilns are set under the shed also, so that the labourers can make and burn at any time, and be protected from rain. By using the screenings of stone coal in the clay, it requires only one-fourth as much wood as by the old method, and the wood used is chesnut or poplar, of little value for fuel in most places. The kilns are generally fired on Monday, and are done burning before Saturday, in all cases, so that the sabbath may be kept by brick burners in all cases, as it should be by all the citizens of our common country.

If a farmer desires to build a house of brick, and have it dry, let him strip the walls, and lath and plaster as in a frame house, and he has a cheap, durable, neat, dry house, that will last for ages, and do credit to the intelligence and foresight of the age, and render important benefits to the rising generation—as wooden buildings ought to be placed along side of wooden ploughs, the old hand rakes, and the old stages.

All barns might and ought to be built of brick or stone, instead of wood, as the materials for building barns are getting scarce and high, and ought to be preserved for inside work, and other indispensable necessities. Brick is as cheap as wood in many cases, and much more so, if we include the durability and the intrinsic value to the farmer. I hope to see the improved method of making and burning brick introduced into Delaware, in order that the farmer may have a cheap, durable material, for houses and barns, and the old wooden building be supplied by permanent brick ones, and covered with slate, a lasting material, and better than tin, wood, or any other material.

HENRY CANINE.

Mount Vernon Farm, Del.,
April 19th, 1847.

For the Farmers' Cabinet.

Remarks on the Purchase of a Horse.

THE following directions, &c., were first published in England as part of a prize essay. I copy from Skinner's Farmers' Library, and think they may be valuable to the readers of the Cabinet. When the farmer wishes to purchase a horse, and is obliged to go into the market or to auction to do it, he hardly runs a greater risk in any purchase he makes: and he would do well either thoroughly to acquaint himself in the matter, or take a friend with him who is *at home* when handling the horse. This comes from one who has suffered from his own ignorance.

EQUUS CABBALLUS.

"Having selected a horse whose *make and shape* please us, our next consideration is his soundness; for, though the horse dealer may declare that he is as *sound as a bell*, we are to take the phrase as one having various meanings, and not be deterred from examining him, and narrowly, too, on that account. *Sight, wind, and limb*, must be the uppermost objects of inquiry; for nine hundred horses out of a thousand are defective in one of these particulars. First, then, examine his eyes, and do this before he comes out of the stable. Having placed him so that the light may fall upon the eyes but in one direction, see that they are of the same size, and equally full; that the haws are not prominent, and that one does not project more than the other; that the eyes are perfectly clear and transparent; and that the pupils, or *apples of the eyes*, are exactly alike in size as well as colour. A sunken eye, or one over which the lids are partly closed—a projecting haw—an opaque or semi-opaque

front—a pupil dilated, or a white or clouded one—are so many omens of disease, for which we should reject the *prad* as a *cupid*,† or, what is often worse, a *blinker*, who will shy at all he meets with, and break your neck the first *peser*‡ you ride him at. Having satisfied yourself in regard to his *peepers*, have him *pulled out*, and next proceed to examine his *pipes*. If *good* and *sound*, on being nipped in the gullet, he will utter such a sound as cannot fail to strike the ear as the emission of a good *pair of bellows*; but if his *lungs* are *touched*, and he is a *piper*,—that is, *broken winded*, or *having no wind at all*—he will give vent to a *dry, husky, short cough*. Should a horse be suspected of *bad wind*, however, the purchaser cannot do better than direct his attention to the flanks, which, under such circumstances, will work either much quicker than ordinarily, or heave deeply, and with great irregularity; they will be considerably longer in contracting themselves, in order to squeeze the wind out,|| than in falling to let it in,§ which they do, if he is a *piper*, quite suddenly. But, though not a *piper*, he may be a *whistler*, or, what is worse, a *roarer*; the first may be known by the peculiar *whreezing* he is addicted to when put to sudden or long continued exertion; the latter, by *blowing his horn* clamorously under similar circumstances; and either may be made to display itself, by the purchaser giving him a smart cut, or even feigning to do so, with his *bit of ash*.

Thirdly, and lastly, as to the limbs. If, in passing our hand down his legs, we find any unnatural protuberance, or puffiness, or if, in feeling first one leg and then the other, we discover any difference between them, disease, more or less, is present; he may not be *lame*, but he is not *clean upon his legs*. *Splenis*, *windgalls* and *ringbones*, may be present without occasioning lameness, but they are all unnatural, are considered *blemishes*, and are all to be regarded with a suspicious eye, as either denoting past *hard work*, or betokening future evils. On the same principle, a horse may have a *spavin*, and be *only stiff* from it at *starting*, or he may have a *curb*, or a *thorough-pin*, and be *perfectly sound*; but these are still *blemishes*, and as such detract from the intrinsic value of the animal. In explaining the advantages resulting from *good* conformation, we are *naturally* led to make remarks *en passant*, on the disadvantages from *bad*; in pursuance whereof, I have shown *why* such

a structure is *bad*, a question that *necessari-ly* entails upon us the mention of the *disorders originating therein*; i. e. the diseases to which such parts, in consequence of being *malformed* are *predisposed*.”

Horticultural Premiums.

THE Pennsylvania Horticultural Society offers the following premiums at its stated meeting on the 18th inst. at eight o'clock, P. M., in the large saloon of the Museum building at the corner of Ninth and George streets.

CAMELLIA.

For the best American Seedling, exhibited to the appropriate committee from December to May, inclusive, \$5.

PELARGONIUMS.

For the best ten named varieties, to be exhibited in pots, \$5.

For the second best do. do. do. \$3.

For the third best do. do. do. \$2.

ROSES, *Perpetual*.

For the best six named varieties, to be exhibited in pots, \$3.

For the second best do. do. do. \$2.

ROSE.

For the best American Seedling, ever-blooming, in a pot, \$3.

CINERARIAS.

For the best four named varieties to be exhibited in pots, \$2.

For the second best do. do. do. \$1.

CHERRIES.

For the best, one pound, named variety to be exhibited, \$2.

CUCUMBERS.

For the best four in number to be exhibited, \$2.

For the second best do. do. do. \$1.

RHUBARB.

For the best twelve stalks to be exhibited, \$2.

For the second best do. do. do. \$1.

PEAS.

For the best half a peck to be exhibited, \$2.

For the second best do. do. do. \$1.

POTATOES.

For the best, a fourth of a peck to be exhibited, \$2.

For the second best do. do. do. \$1.

And at the intermediate meeting on the 1st proximo:

ROCKET LARKSPURS.

For the best twelve in number to be exhibited, \$2.

* Transparent cornea. † A blind one. ‡ So called from planting all but the nonperovis. § Expiration. ¶ Inspiration.

CHERRIES.

For the best, three pounds of one or more named varieties, \$2.

For the second best do. do. do. \$1.

STRAWBERRIES.

For the best, two quarts of one or more named varieties, \$2.

For the second best do. do. do. \$1.

TURNIPS.

For the best, one dozen, grown in the open ground, to be exhibited, \$1.

And at the stated meeting on the 15th proximo:

PINKS.

For the best, six named varieties to be exhibited, \$2.

For the second best do. do. \$1.

For the best American Seedling, do. \$2.

GRAPES.

For the best, three bunches, of a black variety to be exhibited, \$3.

For the best, three bunches, of a white variety, to be exhibited, \$3.

PEARS.

For the best, one dozen to be exhibited, \$2.

CHERRIES.

For the best, three pounds of one or more named varieties, \$2.

For the second best do. do. do. \$1.

ARTICHOKES.

For the best, six heads to be exhibited, \$2.

For the second best do. do. \$1.

Time for Budding Fruit Trees.

August has been generally considered the best month for budding, but other months are found to answer quite as well. Pear trees that are not in rich ground should be budded earlier than August, for they often cease to extend their limbs in July, and when they have stopped growing, the buds that we insert, are not likely to live.

The peach in nurseries continues to grow to a late day, and when they are thrifty, August is soon enough to insert buds.

Some nurserymen prefer budding to grafting apple trees; and we must say we have been most successful in budding. In grafting if the scion does not live we lose the stock, or we are obliged to wait for a sprout to grow large enough to be operated upon. In case of the failure of a bud in August, the stock in which it was inserted may have a graft in the spring, thus the nurseryman

will stand a double chance of keeping his rows full.

The operation of budding is quite simple, yet some of our young friends have never seen it performed, and we will try to describe it, though it is a harder job than to bud a stock. The bud should be cut from a limb or twig of this year's growth; and a slip of bark should be taken from the twig with the bud one inch in length—half of this slip above and half of it below the bud. A little of the sap wood of the twig will naturally be sliced off, and will adhere to the bark enclosing the bud. It has been customary to peel out this sap wood and leave nothing but clear bark with the bud, but unless this is done with caution, a vital part of the eye of the bud will come out also and spoil the bud. Some, in slicing off the bud take but little of the sap wood from the twig, and they let that remain.

As soon as the bud is prepared take a sharp penknife and cut a perpendicular slit in the stock one inch long, and as near the ground as you can with convenience. You must cut quite through the bark; at the bottom of this slit cut another at right angles, or directly across the stock, so deep as to enable you to raise the bark or peel it up enough to admit the bud under it; this may be done with a smooth bit of iron or ivory; the bud should then be run under the bark and should be slid up as far as the slit will admit; if the bark of the bud is too long for the slit it should be cut off square with the cross cut in the stock, and the bud should be kept in place by tying some matting around the stock above and below the bud.

Some choose the month of June for budding; in this case the bud will become a limb in the same season. When the buds are inserted early, care must be taken to cut the matting or to loosen it on finding that the stock wants more room.—*Massachusetts Ploughman.*

For the Farmers' Cabinet.**Prevention of Rot in the Potatoe Crop.**

MR. EDITOR,—Dear Sir: The general failure of the potatoe crop in old Ireland, and the partial failure for several seasons of this most valuable esculent in this country, has induced me to hand you a brief detail of my method of successfully cultivating this root.

The first season the rot made its appearance in this country, I had about my usual breadth in potatoes, a small portion of which was in two low spots of land, and in these spots, on taking out my crop, I found an

abundant yield of large potatoes much affected by rot; from that time I have selected a dry, healthy soil, for planting my potatoes.

My land having been laid down in grass for three years, is ploughed for corn about nine inches deep, and for this crop I put on from 50 to 70 bushels of stone lime per acre. The season following, I plough the same land full as deep as it had been ploughed the preceding year; harrow it down fine, and again cross-plough in the potatoe seed with the manure, about half the depth of the previous ploughing—say four to four and a half inches: thus the land being loose under the potatoes, when the sudden falls of rain which we often have in August, occur, succeeded by a scorching sun, the water passes down from the potatoe, and the vegetable remains uninjured.

Truly yours,

WM. CRISPIN.

Marlborough Farm, Great Timber
Creek, New Jersey.

Anthracite Coal.

Men of middle age can well remember when the anthracite coal lands of Pennsylvania could all have been purchased for a trifle; and yet these same lands, so recently deemed worthless, have sent two millions of tons of coal to market the present year, and have yet in store vast deposits of the same fuel, to give warmth, illumination, and motive power to generations to come.

What is true of the coal, is also true respecting the iron banks of central and western Pennsylvania, which enable the city of Pittsburg alone, to manufacture more iron than all Great Britain at the close of the American revolution. The same remark will apply also to the great deposit of salt and lead west of the Alleghanies.—*Montreal Herald*.

SHEEP TRADE.—The Pittsburg Gazette says a large operation is going on in an adjoining county in Ohio, in slaughtering sheep, feeding hogs with the offal, rendering the carcase into tallow, curing the hams for market, and preparing the pelts in a mercantile manner. Last season about 20,000 sheep were thus "manufactured." This season 1000 hogs are fattening at one establishment.

At Cleveland, beef packing has commenced in earnest. Mr. Leman is putting up superior beef for the English market. He has killed 3000 head, and shipped 1500 tierces. Thirty to forty head are killed per

day. Part of the beef will be shipped via New Orleans. The Ohio cattle are represented as being remarkably fine this year.

NURSERIES.—We learn that nurseries are increasing in every direction; so much the better. It is time to cut down many of our old orchards and begin on better plans. We need not fear being over stocked with winter fruit, for our market is unlimited; we send apples to Europe, to the East Indies, to the West Indies, and to South America. Our northern apples are preferred to those of the middle States, for they can be longer kept. What can we do better than to supply the world with the fruits that are adapted to our climate? If we cannot compete with the West in the articles of corn and grain, we can raise better apples than any of them and make a more ready market.

We are pleased that many farmers are now aware that one apple tree in tilled land, or in a hog-yard, is worth half a dozen standing in unbroken sward land.—*Massachusetts Ploughman*.

A WRITER in the Boston Courier, over the signature of "J. N. B.," estimates the rise in value on the agricultural productions of the United States, since September 1, 1846, as follows: On the crop of Indian corn,—estimated at 480,000,000 bushels—the advance—estimated at 25 cents per bushel—is \$120,000,000; on the crop of wheat the advance is estimated at \$56,000,000; on the crop of oats \$16,000,000; rye \$36,000,000; on the crop of hay the advance—in consequence of the increased use of corn and other grains for bread stuffs—is estimated at \$45,000,000. Showing a total rise in value of \$273,000,000.—*Enquirer*.

COMPOSITION FOR SHOES.—Two parts of tar, two of beef's tallow, and one of beeswax, make a good composition for boots and shoes. Apply it quite warm, and warm the leather that it may penetrate. As farmers are frequently exposed to wet, they should be careful to keep their feet dry and warm, for on this their health and comfort in a great measure depend. There are various compositions that are good to resist water and preserve leather, and the proportion of the above may be varied. Tar and tallow will answer alone; so will tallow and beeswax. Linseed oil is used as a good ingredient in water proof composition. Neat's foot oil is excellent and preserves the leather soft.—*Exchange paper*.

THE English papers state that a lad of seventeen years had died recently in the hospital of Navan, of Glanders, contracted from a horse which he had attended. The disease was received by the boy through a slight cut on one of his fingers. Horses may sometimes be cured of this frightful disease, but a remedy for the human subject has hitherto, we believe, been beyond the reach of medicine.

GRANT THORBURN says that his wife has lost but one tea-spoon since they have kept house. "I now have," says he, "silver tea-spoons in my house, and in daily use, which I bought forty-five years ago, and table-spoons I bought thirty years ago—but my wife always counted them when they went into the kitchen—had them brought up and put into her own hands—thus we have lost only one tea-spoon since we commenced housekeeping."

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, FIFTH MONTH, 1847.

THE spring has been cool, dry, and consequently backward. The peach crop, it is feared, was seriously injured by the frosts of last month, and many of our friends have advised us that the promise of apples was not flattering. The winter too, has been an unfavourable one for wheat, as there was much freezing and thawing, and the ground was a good deal bare of snow. It is, however, too early to speak with any degree of certainty of any of these crops. We will hope that our markets will be liberally supplied in their season with the peach and the apple, and that the early and the latter rain will yet cause the field of the husbandman to wave with its wonted abundance, and that when the sickle is thrust in, a harvest of many fold may be gathered. Prices of bread stuffs continue high, in consequence of the undiminished demand abroad: and this renders a full harvest of great importance to every one of us. Our granaries and our corn cribs will be far more than usually drained, and our reliance for the supply of our own wants during the coming year, must be mainly upon the crop of the year.

It is delightful to perceive the whole country, as with the heart of one man, responding to the call of distress and destitution in Ireland and other places: not only because of the evidence it affords of our disposition to discharge this part of a Christian's duty, but also because of its tendency to draw more firmly together the bonds of our relationship with other nations, and place in a conspicuous light the incomparably superior pleasure there is to be enjoyed in bestowing benefits, than inflicting injuries.

Flour is worth about \$7 50 per barrel; wheat \$1 50 to \$1 75 per bushel; corn \$1; oats 50 to 60 cents. Po-

tatoes bring \$1 per bushel, readily in our markets. Hay is worth from \$14 to \$18 per ton, according to quality.

UNUSUALLY large breadths of corn have been planted this spring, and our supply of *Pondrette* fell greatly behind the demand. We regret that so many should be disappointed, and unable to obtain it. We began the season with a large stock on hand, but it was exhausted towards the close of last month. We are now however prepared to meet any calls. The *Pondrette* has been heretofore considerably used, and to good purpose, to put around the corn hills just previous to the first harrowing or ploughing, when it can be covered from the sun.

Attention is invited to the sale of a part of James Gowen's stock of splendid cattle and swine, as advertised in this number, to take place on the 27th inst. It is unnecessary to say anything in reference to the character of the animals now offered, as both their breeder and they, are well known. Persons wishing to possess prime specimens, will of course be in attendance, and avail themselves of this rare opportunity.

LEA & BLANCHARD, of this city, have just published in neat duodecimo form, "A DICTIONARY OF MODERN GARDENING. By GEORGE WILLIAM JOHNSON, Esq., Fellow of the Horticultural Society of India; corresponding member of the Royal Caledonian, and Maryland Horticultural Societies; author of the Principles of practical Gardening; the Gardeners' Almanac, &c., with 180 wood cuts;" and edited, with numerous additions, by our fellow townsman DAVID LAMBERT. Price, \$3.25.

Utility, as the author says, has been his principal object. He has endeavoured to collect in as small compass as practicable, a well arranged record of Gardening as it is. To attain this object, he has drawn aid from the best living authors, as well as from their published works, but has not neglected that of other periods, where he discovered in them, directions, upon which the moderns have not improved.

This edition has been very considerably altered from the original by the American editor, in order to adapt it more thoroughly to the wants and climate, and practice of this country. It will, we are satisfied, be a valuable addition to the Gardeners' Library—and indeed, to the shelf of the farmer, who at all appreciates the value of his kitchen garden.

THE quantity of rain which fell in the 4th month, 1847, was only a little more than half an inch.

Penn. Hospital, 5th mo. 1st.

0.385 in.

OF SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Gunno in parcels to suit purchasers.

Philad., Feb., 1847.

M. S. POWELL.
tf.**FOR SALE,****AT D. O. PROUTY'S****AGRICULTURAL WAREHOUSE,**

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$30 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

May 15th—tf.

**Agency for the Purchase & Sale of
IMPROVED BREEDS OF CATTLE & SHEEP.**

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

April 15th, 1847.

AARON CLEMENT.

REMOVAL.

....

H. P. M. BIRKINBINE,

Has removed to No. 17 South Eighth Street, Philadelphia, where he is still prepared to furnish

Hydraulic Rams, Pumps, &c.

Of all sizes and kinds, for the supply of water to *Fil-lages, Factories, Railroad Stations, Farms, &c.* He will continue to put them in operation and furnish the pipe and fixtures when required.

H. P. M. B. hopes by his attention and experience to retain the generous patronage extended to him.

A Ram may be seen in operation at his shop in Shoemaker Street, (running East from Eighth, a few paces south of Market.)

May 15th.—1t.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES,
Successor to George M. Coates.

May 15th, 1847.

**PUBLIC SALE OF
SPLENDID DURHAM CATTLE**

AND

CHOICE YOUNG SWINE,

From the Herds of

JAMES GOWEN, Mount Airy,*To be Sold by C. J. WOLBERT & Co.***On Thursday May 27th, at 11 o'clock, A. M.**

Either at Mount Airy or the Rising Sun, the place to be designated in future advertisements, and in catalogues, to be issued some time previous to sale, consisting of Imported Durham Cows, and young Bulls and Heifers and Calves derived from Imported Stock.

Among the Cows are the celebrated *Dairy Maid*, *Imported Walnut*, *Victoria*, &c., &c., all in calf—also numerous of their offspring by *Leander*, *Prince of Wales*, &c. The Swine consists of young Boars and Sows reared expressly for breeders.

May 3rd, 1847.

NEW**Horticultural and Agricultural Ware-house,**

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Swede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Third month 15th, 1847.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUIST'S ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½
JOHNSON'S DICTIONARY OF MODERN GARDENING,	2 25

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

WE are prepared to bind books to order.

AFRICAN GUANO.

First quality African Guano, from the Island of Ichoaboe, warranted genuine. Also a few tons Peruvian.

For sale by J. B. A. & S. ALLEN,
No. 7 South Wharves, 2nd Oil Store below
Market street.

Philadelphia, March 17th, 1847.

Fondrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Center street. Present price, \$3 60 per barrel, containing four bushels each, or 40 cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for corn.

JOSIAH TATUM.

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THE FARMERS' CABINET,

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JOSIAH TATUM No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

TERMS.—One dollar per annum, or five dollars for seven copies—payable in advance.

All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

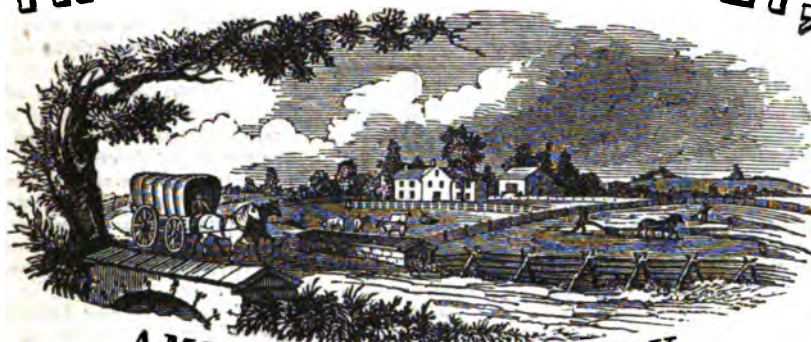
By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Bakerstraw, Printer.

Rec June 18. '47.

THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO
AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. XI.—No. 11.

6th mo. (June) 15th, 1847.

[Whole No. 149.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,
PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

Manufacture of Sulphuric Acid.

MY DEAR SIR,—The manufacture of soda from common culinary salt, may be regarded as the foundation of all our modern improvements in the domestic arts; and we may take it as affording an excellent illustration of the dependence of the various branches of human industry and commerce upon each other, and their relation to chemistry.

Soda has been used from time immemorial in the manufacture of soap and glass, two chemical productions, which employ and keep in circulation an immense amount of capital. The quantity of soap consumed by a nation would be no inaccurate measure whereby to estimate its wealth and civilization. Of two countries with an equal amount of population, the wealthiest and most highly civilized will consume the greatest weight of soap. This consumption does not subserve sensual gratification, nor depend upon fashion, but upon the feeling of the beauty, comfort, and welfare attendant upon cleanliness; and a regard to this feeling is coincident with

CAR.—VOL. XI.—No. 11.

wealth and civilization. The rich in the middle ages concealed a want of cleanliness in their clothes and persons, under a profusion of costly scents and essences, while they were more luxurious in eating and drinking, in apparel and horses. With us a want of cleanliness is equivalent to insupportable misery and misfortune.

Soap belongs to those manufactured products, the money value of which continually disappears from circulation, and requires to be continually renewed. It is one of the few substances which are entirely consumed by use, leaving no product of any worth. Broken glass and bottles are by no means absolutely worthless; for rags we may purchase new cloth, but soap-water has no value whatever. It would be interesting to know accurately the amount of capital involved in the manufacture of soap; it is certainly as large as that employed in the coffee trade, with this important difference as respects Germany, that it is entirely derived from our own soil. France formerly imported soda from Spain, Spanish soda being of the best quality, at an annual expenditure of twenty to thirty millions of francs. During the war with England, the price of soda, and consequently of soap and glass, rose continually; and all manufactures suffered in consequence.

The present method of making soda from common salt was discovered by Le Blanc at the end of the last century. It was a rich boon for France, and became of the highest

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importance during the war of Napoleon. In a very short time it was manufactured to an extraordinary extent, especially at the seat of the soap manufactories. Marseilles possessed for a time a monopoly of soda and soap. The policy of Napoleon deprived that city of the advantages derived from this great source of commerce, and thus excited the hostility of the population to his dynasty, which became favourable to the restoration of the Bourbons. A curious result of an improvement in a chemical manufacture! It was not long, however, in reaching England.

In order to prepare the soda of commerce—which is the carbonate—from common salt, it is first converted into Glauber's salt, —sulphate of soda. For this purpose 80 pounds weight of concentrated sulphuric acid—oil of vitriol—are required to 100 pounds of common salt. The duty upon salt checked, for a short time, the full advantage of this discovery; but when the government repealed the duty, and its price was reduced to its minimum, the cost of soda depended upon that of sulphuric acid.

The demand for sulphuric acid now increased to an immense extent; and, to supply it, capital was embarked abundantly, as it afforded an excellent remuneration. The origin and formation of sulphuric acid was studied most carefully; and from year to year, better, simpler, and cheaper methods for making it were discovered. With every improvement in the mode of manufacture, its price fell; and its sale increased in an equal ratio.

Sulphuric acid is now manufactured in leaden chambers, of such magnitude that they would contain the whole of an ordinary sized house. As regards the process and the apparatus, this manufacture has reached its acmé—scarcely is either susceptible of improvement. The leaden plates of which the chambers are constructed, requiring to be joined together with lead,—since tin or solder would be acted on by the acid,—this process was, until lately, as expensive as the plates themselves; but now, by means of the oxyhydrogen blow-pipe, the plates are cemented together at their edges, by mere fusion, without the intervention of any kind of solder.

And then, as to the process; according to theory, 100 pounds weight of sulphur ought to produce 306 pounds of sulphuric acid; in practice, 300 pounds are actually obtained; the amount of loss is therefore too insignificant for consideration.

Again; saltpetre being indispensable in making sulphuric acid, the commercial value of that salt had formerly an important influ-

ence upon its price. It is true that 100 pounds of saltpetre only are required to 1000 pounds of sulphur; but its cost was four times greater than an equal weight of the latter.

Travellers had observed, near the small seaport of Yquiqui, in the district of Atacama, in Peru, an efflorescence covering the ground over extensive districts. This was found to consist principally of nitrate of soda. Advantage was quickly taken of this discovery. The quantity of this valuable salt proved to be inexhaustible, as it exists in beds extending over more than 200 square miles. It was brought to England at less than half the freight of the East India saltpetre—nitrate of potassa; and as, in the chemical manufacture, neither the potash nor the soda was required, but only the nitric acid, in combination with the alkali, the soda-saltpetre of South America soon supplanted the potash-nitre of the East. The manufacture of sulphuric acid received a new impulse; its price was much diminished without injury to the manufacturer; and, with the exception of fluctuations, caused by the impediments thrown in the way of the export of sulphur from Sicily, it soon became reduced to a minimum, and remained stationary.

Potash-saltpetre is now only employed in the manufacture of gunpowder; it is no longer in demand for other purposes; and thus, if government effect a saving of many hundred thousand pounds annually in gunpowder, this economy must be attributed to the increased manufacture of sulphuric acid.

We may form an idea of the amount of sulphuric acid consumed, when we find that 50,000 pounds weight are made by a small manufactory, and from 200,000 to 600,000 pounds by a large one, annually. This manufacture causes immense sums to flow annually into Sicily. It has introduced industry and wealth into the arid and desolate districts of Atacama. It has enabled us to obtain platina from its ores at a moderate and yet remunerating price; since the vats employed for concentrating this acid are constructed of this metal, and cost from £1000 to £2000 sterling. It leads to frequent improvements in the manufacture of glass, which continually becomes cheaper and more beautiful. It enables us to return to our fields all their potash—a most valuable and important manure—in the form of ashes, by substituting soda in the manufacture of glass and soap.

It is impossible to trace, within the compass of a letter, all the ramifications of this tissue of changes and improvements resulting from one chemical manufacture; but I

must still claim your attention to a few more of its most important and immediate results. I have already told you, that in the manufacture of soda from culinary salt, it is first converted into sulphate of soda. In this first part of the process, the action of sulphuric acid produces primary muriatic acid to the extent of one and a half the amount of the sulphuric acid employed. At first the profit upon the soda was so great that no one took the trouble to collect the muriatic acid; indeed it had no commercial value. A profitable application of it was, however, soon discovered: it is a compound of chlorine, and this substance may be obtained from it purer than from any other source. The bleaching power of chlorine has long been known; but it was only employed upon a large scale after it was obtained from residuary muriatic acid, and it was found that in combination with lime it could be transported to distances without inconvenience. Thenceforth it was used for bleaching cotton; and, but for this new bleaching process, it would scarcely have been possible for the cotton manufacture of Great Britain to have attained its present enormous extent—it could not have competed in price with France and Germany. In the old process for bleaching, every piece must be exposed to the air and light during several weeks in the summer, and kept continually moist by manual labour. For this purpose, meadow land, suitably situated, was essential. But a single establishment near Glasgow, bleaches 1,400 pieces of cotton daily, throughout the year. What an enormous capital would be required to purchase land for this purpose! How greatly would it increase the cost of bleaching to pay interest upon this capital, or to hire so much land in England! This expense would scarcely have been felt in Germany. Beside the diminished expense, the cotton stuffs bleached with chlorine suffer less in the hands of skilful workmen than those bleached in the sun; and already the peasantry in some parts of Germany have adopted it, and find it advantageous.

Another use to which cheap muriatic acid is applied, is the manufacture of glue from bones. Bone contains from 30 to 36 per cent. of earthy matter—chiefly phosphate of lime, and the remainder is gelatine. When bones are digested in muriatic acid, they become transparent and flexible like leather, the earthy matter is dissolved, and after the acid is all carefully washed away, pieces of glue of the same shape as the bones remain, which are soluble in hot water and adapted to all the purposes of ordinary glue, without further preparation.

Another important application of sulphuric acid may be adduced, namely, to the refining of silver and the separation of gold, which is always present in some proportion in native silver. Silver, as it is usually obtained from mines in Europe, contains, in 16 ounces, 6 to 8 ounces of copper. When used by the silversmith, or in coining, 16 ounces must contain in Germany 13 ounces of silver, in England about 14½. But this alloy is always made artificially, by mixing pure silver with the due proportion of the copper; and for this purpose the silver must be obtained pure by the refiner. This he formerly effected by amalgamation, or by roasting it with lead; and the cost of this process was about £2 for every hundred weight of silver. In the silver so prepared, about $\frac{1}{1000}$ to $\frac{1}{5000}$ part of gold remained. To effect the separation of this by nitric hydrochloric acid was more expensive than the value of the gold; it was therefore left in utensils, or circulated in coin, valueless. The copper, too, of the native silver was of no use whatever. But the $\frac{1}{1000}$ part of gold, being about one and one-half per cent. of the value of the silver, now covers the cost of refining, and affords an adequate profit to the refiner; so that he effects the separation of the copper, and returns to his employer the whole amount of the pure silver, as well as the copper, without demanding any payment: he is amply remunerated by that minute portion of gold. The new process of refining is a most beautiful chemical operation. The granulated metal is boiled in concentrated sulphuric acid, which dissolves both the silver and the copper, leaving the gold nearly pure, in the form of a black powder. The solution is then placed in a leaden vessel containing metallic copper; this is gradually dissolved, and the silver precipitated in a pure metallic state. The sulphate of copper is also a valuable product, being employed in the manufacture of green and blue pigments.

Other immediate results of the economical production of sulphuric acid, are the general employment of phosphorus matches, and of stearine candles—that beautiful substitute for tallow and wax. Twenty-five years ago, the present prices and extensive applications of sulphuric and muriatic acids, of soda, phosphorus, &c., would have been considered utterly impossible. Who is able to foresee what new and unthought-of chemical productions, ministering to the service and comforts of mankind, the next twenty-five years may produce?

After these remarks you will perceive that it is no exaggeration to say, we may

fairly judge of the commercial prosperity of a country from the amount of sulphuric acid it consumes. Reflecting upon the important influence which the price of sulphur exercises upon the cost of production of bleached and printed cotton stuffs, soap, glass, &c., and remembering that Great Britain supplies America, Spain, Portugal, and the East, with these, exchanging them for raw cotton, silk, wine, raisins, indigo, &c., &c., we can understand why the English government should have resolved to resort to war with Naples, in order to abolish the sulphur monopoly, which the latter power attempted recently to establish. Nothing could be more opposed to the true interests of Sicily than such a monopoly; indeed, had it been maintained a few years, it is highly probable that sulphur, the source of her wealth, would have been rendered perfectly valueless to her. Science and industry form a power to which it is dangerous to present impediments. It was not difficult to perceive that the issue would be the entire cessation of the exportation of sulphur from Sicily. In the short period the sulphur monopoly lasted, fifteen patents were taken out for methods to obtain back the sulphuric acid used in making soda. Admitting that these fifteen experiments were not perfectly successful, there can be no doubt it would ere long have been accomplished. But, then, in gypsum—sulphate of lime—and in heavy-spar—sulphate of barytes—we possess mountains of sulphuric acid; in galena—sulphate of lead—and in iron pyrites we have no less abundance of sulphur. The problem is, how to separate the sulphuric acid, or the sulphur, from these native stores. Hundreds of thousands of pounds weight of sulphuric acid were prepared from iron pyrites, while the high price of sulphur consequent upon the monopoly lasted. We should probably ere long have triumphed over all difficulties, and have separated it from gypsum. The impulse has been given, the possibility of the process proved, and it may happen in a few years that the inconsiderate financial speculation of Naples may deprive her of that lucrative commerce. In like manner Russia, by her prohibitory system, has lost much of her trade in tallow and potash. One country purchases only from absolute necessity from another, which excludes her own productions from her markets. Instead of the tallow and linseed oil of Russia, Great Britain now uses palm oil and cocoa-nut oil of other countries. Precisely analogous is the combination of workmen against their employers, which has led to the construction of many admirable machines for superseding manual labour. In commerce and industry

every imprudence carries with it its own punishment; every oppression immediately and sensibly recoils upon the head of those from whom it emanates.—*Liebig's Letters.*

LETTUCE.—The use of Lettuce as a cooling and agreeable salad, is well known; it is also a useful ingredient in soups. It contains, like the other species of this genus, a quantity of opium juice, of a milky nature, from which of late years, medicine has been prepared, under the title of *Lactucarium*, and which can be administered with effect in cases where opium is inadmissible.

The varieties are very numerous. Those herein enumerated have been selected from the many which have come under our observation, and will be found to suit the various seasons of the year. Some varieties celebrated in Europe, are of little value here, soon shooting to seed under our hot sun.

The Early Cabbage Lettuce is the earliest; it produces a moderately sized and very firm head; it is known among the Philadelphia market gardeners as the "butter salad."

The Royal Cabbage Lettuce is a very large variety, dark green, with firm head, and withstanding the sun better than the preceding variety, not rapidly shooting to seed.

The India is a very fine kind, produces large hard heads, leaves wrinkled, stands the sun remarkably well.

The Philadelphia Cabbage resembles the "Royal," and is in all respects a desirable variety.

The Early Curled [Silesia] does not head; is used principally as "cut salad."—*Massachusetts Ploughman.*

METHOD OF DETERMINING THE WEIGHT OF CATTLE.—The following method of ascertaining the dead weight of cattle by measurement when alive, has been adopted to a considerable extent. It is found to be an expeditious mode; and if not to be implicitly depended upon, at least furnishes a very important assistance to the judgment of the dealer.

Rule.—Take the *girth* of the beast by measuring round with a string or tape close behind the shoulder-blade, and the length by measuring from the fore part of the shoulder-blade, along the back, to that bone of the tail which is in a perpendicular line with the hind part of the buttock. Multiply the girth (in feet) by itself, and that product by the length, and then again by 42. The last product, divided by 100, will give the weight in Smithfield stones of 8 lbs. each. If stones of 14 lbs. are required, the multiplier will be 24 instead of 42.—*Baxter's Library, A. K.*

Selling Sheep.

We have very frequently caught a good practical hint, from observing the habits of close calculation, which the English bring into their business operations. Everything seems systematized much more there, than with us. With the farmer as well as the manufacturer, the penny or the shilling profit, is carefully estimated, and plans laid accordingly. In this matter, we are well satisfied our farmers are abundantly deficient: and the result is a waste, and a neglect of opportunity that would insure a handsome profit. The following extract from *Stephens's Book of the Farm*, as now in course of publication in the *Farmers' Library*, will be read in reference to the subject alluded to, with interest.—Ed.

THE many casualties incidental to sheep on travel, more especially in winter, require consideration from the farmer before undertaking to send his stock to a distant market-town, in preference to taking them to a fair, or accepting an offer for them at home. A long journey in winter will cost at least 1s. a head, and their jaded appearance may have the effect of lowering their market price 2s. or 3s. a head more. Under any circumstances, when you have determined on sending your sheep to a market-town, it is, I believe, the best plan, after the journey, to entrust them to a salesman, rather than stand at market with them yourself, as you cannot know the character of the buyers so well as he does, nor can you know what class of purchasers your lot may best suit. The convenience attending the employment of a salesman is now generally felt, because it not only saves the personal annoyance of attending a market, but your money is remitted to you through a bank in the course of the day. The only precaution requisite in the matter is to become acquainted with a salesman of judgment; for as to honesty, if he have not *that*, he is of course quite worthless. In attending country fairs, the case is otherwise; there being no salesman, you yourself must stand by your lot. Before attending the fair, you should make up your mind what to ask for your stock, in accordance with the current market prices; but, notwithstanding this, you may come away with more or less cash than you anticipated, because the actual state of *that* market will be regulated by the quality and quantity of the stock brought forward, and by the paucity or numbers of buyers who may appear. After your sheep are fairly placed, you should inquire of friends of the state of prices before you sell, and on doing this you will frequently find the market in a most perplexing state from various causes. Thus, there may be too many sheep for the buyers, when the market will be dull, and remain so all day. On the other hand, the stock may be scanty

for the buyers, when a briskness may start in the morning and continue even till the whole stock are sold off. There may be briskness in the morning, the buyers purchasing; dullness at mid-day, buyers declining; and briskness again in the afternoon, buyers again purchasing. There may be excessive dullness in the morning, occasioned by the buyers lying off and beating down prices, and, finding they cannot succeed, buy briskly all the afternoon. There may be dullness in the morning, arising from the dealers finding the condition of the stock below their expectation. The markets are never better for the farmer than when they begin brisk early in the morning, and the stock are all sold off early. These are the vicissitudes of a market; they are interesting, demand attention, and are worth examination. You will frequently observe a trifling circumstance give a decided tone to a market. A dealer, for instance, who generally buys largely, and having bought for many years respectively in that particular fair, will mark the prices of the day by his purchases; so that other people, particularly sellers, observing the prices given by him, will sell briskly and with confidence. There is no use, at any time, of asking a much higher price than the intrinsic value of your stock, or than you will willingly take; for, although your stock may be in particularly fine condition, and of good quality, and therefore worth more than the *average* price of the market, still their value must conform to the *rate* of the market, be it high or low, and it is not in your power to control it; though, if prices dissatisfy you, you have it in your power to take your stock home again. There is a common saying applicable to all public markets, and is now received as a maxim, because indicating the truth, that "the first offer is the best," that is, the first offer from a *bona fide* buyer; for there are people to be found in all markets who, having no serious intention of buying at market price, make a point of offering considerably below it, with the view of catching a bargain from a greenhorn, or from one tired of standing longer in the fair, and they sometimes succeed in their wishes; but such people are easily discovered, and therefore cannot deceive any but inexperienced sellers.

There are certain *rules* which, by tacit consent, govern the principles upon which all public markets of stock are conducted, and they are few and simple. There is a *custom* payable for all stock presented at fairs, exigible by the lord of the manor, or other recognized authority. After entering the field, your stock can take up any unoccupied position you choose, appointed for the

particular kind of stock you have to show. No one, on pretence of purchasing, has a right to interfere with a lot which is under inspection by another party. Neither have you any right to show your lot to more than one party at a time, unless each party consent to it. When a bargain is made, there is no necessity for striking hands, or exchanging money, as an earnest of it. When a bargain is made, a time may be stipulated by the purchaser for lifting the stock; and, until they are delivered to him or his accredited agents, they continue at the risk of the seller. When counted over before the purchaser, the price becomes immediately due. When the money is paid, there is no obligation on the seller to give a discount off the price, or a *luck-penny*, as it is termed; but purchasers sometimes makes offers in a way to humour the prejudices of the seller—that is, they offer the price demanded, on condition of getting back a certain sum, or amount of *luck-penny*, to bring the price down to their own ideas; in such a case, when such an offer is accepted, the seller must return the *luck-penny* conditioned for, when he receives the money. Sometimes, when parties cannot agree as to price, the offerer proposes to abide by the decision of a third party; but, in doing this, you virtually relinquish your power over your own stock. Sometimes bills and bank-postbills are tendered by dealers in part or entire payment of what they purchase; but it is in your power to refuse any form of cash but the legal tender of the country, such as Bank of England notes, or gold, or silver. If a bill of exchange or promissory note is proffered, instead of ready money, you are quite entitled to refuse the bargain; for the usage of trade in a fair implies the condition of ready money; or you may demand a higher price to cover the risk of the bill being dishonoured. The notes of any bank you know to be good, you will, of course, not refuse. After the stock are delivered, they are at the risk of the purchaser. Some dealers' *top's-men*—that is, the men who take charge of their master's lots after delivery—demand a gratuity for their trouble, which you are at liberty to refuse. All these rules, in as far as relates to money and the delivery of stock, apply to the stock purchased by dealers on your own farm. When you *purchase* stock at a fair, people will be found on the ground willing to render your drover assistance in taking them out of it, and of setting them fairly on the road. Such people are useful on such occasions, as it may happen, especially in the case of sheep, that one or more may break away from their own flock and mix with another, when there may not

only be difficulty in shedding them out, but those into whose lot yours have strayed may show unwillingness to have their stock disturbed for your sake, though it is in your power to follow your strayed stock, and claim it anywhere by the wool-mark.

On the supposition that you send sheep to London by steam on your own account, they should be of the following description, to command the best prices, and unless they are so you had much better dispose of them at home. They should be ripe, compact, and of light weight; carrying a large proportion of lean on the back, loins, and shoulders, with a full, round leg and handsome carcass. Such, from 14 lbs. to 20 lbs. a quarter, will take readily, but they will draw the most money at 16 lbs. to 18 lbs. The nearer in their form and quality they approach the South-downs, the more likely to command top prices. True bred Cheviots and the Black-faced Linton breed approach very near to the South-down, and command as high a price. Halfbreds, between Leicester tups and the above sorts of Cheviot and Black-faced ewes, form valuable sheep. The old Black-faced breed are too *thin*, and therefore styled *goaty* in Smithfield, and when only half-fat, or *half-meated*, as the condition is there termed, fetch middling prices, however good their flavor may be. Pure bred Leicesters are too *fat*, unless sent young, and not exceeding 20 lbs. a quarter, but above that weight, fetch inferior prices, so much so that a difference of only 1d. per lb. may perhaps constitute all the difference between a profit and loss on their export. This last remark applies to every other breed, and shows the expediency of only exporting the best form of sheep.

Never attempt to drive stock on foot on your own account to a distant market, when you have steam conveyance to the place of destination. A simple comparison of the results of the two methods of travelling, will show you at once the advantage of steam conveyance. It has been ascertained that a journey of 400 miles on land causes a loss of six stones out of forty stones, or 12 per cent.; whereas the loss by steam is only two stones out of fifty. But besides this great difference in the loss itself, the state in which the remainder of the flesh is left, it is worth 6d. a stone less after land travel; and when stock are sent to graze in that state, they require a month to take with the pasture, whereas the steam-carried will thrive again at the end of a fortnight. Besides all these disadvantages of land travel, the juices of the meat of fat stock never recover their natural state, while, by being carried by steam, they do. Were heavy and

high conditioned stock to be travelled by land, they would inevitably sink under the attempt, while by steam any degree of condition may be conveyed with comparative ease. The time, too, spent on a land journey is of consideration, when a more expeditious mode of travelling is in your option.

Dutch Husbandry.

THE foundation upon which the agriculture of Belgium rests, is the cultivation of clover, which seems indigenous, since none of the most ancient records notice its introduction, but speak of it as familiarly as of hay or oats. It is probably from this country, that the plant in question has been, though but recently, slowly, and hitherto only partially, introduced amongst the farmers of Germany, France, and Great Britain. The clover in Flanders is sown in every sort of grain, in wheat, rye and winter barley, in the spring of the year, when the blades of those plants have acquired a growth of three or four inches; and with oats and summer barley at the same time with those seeds. It is also often sown with flax; and in general, the crops grown between those plants are more luxuriant than when sown with the cerealia. It frequently happens, when sown with flax, that clover yields a heavy crop a few months after it is sown; two still more abundant crops the next year, and sometimes even three; and if, as it occasionally happens, it be suffered to stand another year, it will yield one heavy crop, and afterwards good pasture for cattle, till it is ploughed up to receive the seed of wheat, which usually follows it. The original strength of the plants which yield such abundant nourishment, is undoubtedly due to the care taken in pulverizing the soil by frequent ploughings and harrowings, to the careful extirpation of all weeds, and to the copious stores of manure laid on the ground, and its complete amalgamation with the soil; but the successive harvests which the plants yield are attributed, and with apparent probability, to the top-dressings which are bestowed upon them. The top-dressings administered to the young clover consist either of rotten yard-dung, lime, pigeons' dung, coal, or native turf-ashes, and are laid on as soon as the plants begin to extend themselves over the ground. Sometimes the plants are refreshed with liquid manure.

These manures, though administered to the clovers, as far as they can be obtained, are found far inferior in powers of fertility to that substance which is most generally used, and the effects of which, form the theme of the praises bestowed by all who

have witnessed the Belgian husbandry. The turf ashes of Holland are sown by the hand on the clovers, in quantities varying from eighteen to twenty bushels to the English acre.

This small quantity produces a most surprising and almost magical effect. Within a few weeks after it is sown, a field where none, or but slight straggling plants were to be seen, becomes covered with a most abundant herbage. The parts of a field sown with these ashes, at the first mowing, show their efficacy in a most striking manner; the clover being frequently a foot higher on such parts, than on those where its sowing has been omitted. These ashes are found superior in efficacy to such as are made from the turf commonly used for fuel in Flanders, inasmuch that one-third of the quantity is deemed sufficient to afford a great productiveness.

These ashes are brought from Holland by the canals to Brussels, whence they are conveyed by land carriage to the different farms where they are applied. Long practice has so convinced the Flemish farmers of their benefit, that a common proverb in the patois of the country, may be thus translated: "He that buys ashes for his clover pays nothing, but he who does it not, pays double." They are frequently fetched from the canal by persons who have to carry them forty, or even fifty miles by land.

The abundance of the clover produced from the soil of Flanders, enables the cultivator to maintain a great number of cattle, principally cows, the dung of which is managed with an attention and care which are highly worthy of imitation, and contributes to maintain in a state of high fertility that soil which yields the most exhausting crops. "The farmers," says the Abbe Mann, "supply the want of straw in the following manner: The peat or sods which are cut from the heath, are placed in the stables and cow-stalls as litter for the cattle. The ground under them is dug to a certain depth, so as to admit a considerable quantity of these peat sods, and fresh ones are added as the feet of the cattle tread them down into less compass. These compose so many beds of manure, thoroughly impregnated with the urine and dung of the cattle. This mixture produces a compost of excellent quality for fertilizing ground where corn is to be sown." — *Encyclopaedia Britannica*.

A HASTY PUDDING.—Three pints of scalded milk, 7 spoonfuls of fine Indian meal; stir well together while hot, let it stand till cooled; add four eggs and half a pound of butter, spice and sugar; bake four hours.

Eggs and Poultry.

Among all nations, and throughout all grades of society, eggs have been considered a favourite food. But in our cities, and particularly in winter, they are sold at such prices that few families could afford to use them at all, and even those in easy circumstances consider them too expensive for common use. There is no need of this. Every family, or nearly every family, can, with very little trouble, have eggs in plenty during the year; and of all the animals domesticated for the use of man, the common dunghill fowl is capable of yielding the greatest profit to the owner. In the month of November, I put apart eleven hens and a cock, gave them a small chamber in the wood-house, defended from storm, with an opening to the South. Then food, water and lime were placed on shelves convenient for them, with nests and chalk nest-eggs in plenty. These hens continued to lay eggs throughout the winter. From these eleven hens I received an average of six eggs daily during winter; and whenever any one of them was disposed to sit, namely, as soon as she began to chuck, she was separated from the others by a grated partition and her apartment darkened. These chucklers were well attended to and well fed. They could see and partly associate through the grates with the other fowls, and as soon as any of these prisoners began to sing, she was liberated, and would very soon lay eggs. It is a pleasant thing to feed and tend a bevy of laying hens. They may be tamed so as to follow the children, and will lay in a box. Eggshells contain lime, and when in winter the earth is covered with frost or snow, if lime be not provided for them, they will not lay; or if they do, the eggs of necessity must be without shells. Old rubbish lime from chimneys and old buildings, is proper for them and need only to be broken. They will often attempt to swallow pieces of lime and plaster as large as walnuts. The singing hen will certainly lay eggs if she find all things agreeable to her, but the hen is so much a prude—as watchful as a weazle and fastidious as a hypocrite—she must, she will have secrecy and mystery about her nest. All eyes but her own must be averted. Follow or watch her, and she will forsake her nest and stop laying. She is best pleased with a box covered at the top, with a back side aperture for light, and a side door by which she can escape unseen. A farmer may keep one hundred fowls in the barn, may suffer them to trample on and destroy his mows of grain, and have fewer eggs than the cottager who keeps a dozen, provides secret

nests, chalk eggs, pounded bricks, plenty of corn or other grain, water and gravel for them, and takes care that his hens be not disturbed about their nests. Three chalk eggs in a nest are better than one, and large eggs please them most. I have smiled to see them fondle round and lay in a nest of geese eggs. Pullets will begin to lay early in life, when nests and eggs are plenty, and when others are chuckling around them. A dozen dunghill fowls shut up from the means of obtaining food, will require something more than a quart of corn a day. I think fifteen bushels a year a fair allowance for them; but more or less, let them always have enough by them; and after they have become habituated to find at all times a plenty in their little manger, they take but a few kernels at a time, except just before going to roost, when they will take nearly a spoonful in their crops. But just so sure as their provisions come to them scantied or irregularly, so sure will they raven up a whole cropful at a time and stop laying. A dozen hens well attended, will furnish a family with more than two thousand eggs a year; and one hundred full grown chickens for the fall and winter stores. The expense of feeding a dozen fowls will not amount to more than eighteen bushels of grain. They may be kept in cities as well as in the country, will do as well shut up the year round, as to run at large. A grated room well lighted, ten feet by five, partitioned from a stable or other out-house, is sufficient for the dozen fowls with their roosting, nests and feeding troughs. In the spring of the year five or six hens will hatch at a time, and the fifty or sixty chickens may be given to one hen. Two hens will take care of one hundred chickens well enough until they begin to climb their little stick roosts. They then should be separated from the hens entirely. I have often kept the chickens when young in my garden. They keep the May bugs and other insects from the vines. In case of confining fowls in summer, it should be remembered that a ground floor should be chosen; or it would be just as well to set in their pens, boxes of well dried, pulverized earth, for them to wallow in during warm weather. Their pens should be kept clean.

—*Scottish Gazette.*

From the Cultivator.

Detail of Experience in Farming.

I HAVE read the Cultivator a long time, and find it full of entertaining matter. I here give you a short account of a long experience in farming. In 1795, I commenced for myself, in the town of Stanford, Dutchess

county, N. Y. My father said he could not help me any, but I might sow the "hill lot" with rye. It was a thin, slaty soil—no water in the lot, and on that account had never been laid to pasture, but had always been sown to rye or buckwheat as long as I could remember. I summer-fallowed it, ploughed deep, bringing the sweat out of the team pretty profusely. In the fall I sowed it with wheat. Next harvest I had the best wheat in the neighbourhood.

Now this shows two things, that rye does not much exhaust the land for wheat, and that by frequent and deep ploughings, some land can be recruited without much manure.

In 1798 or '99, I ran in debt for a farm in what was called the "Little Nine Partners." It appeared to be a poor slaty soil; all the plough fields on the farm had been sown to rye for a number of years. I summer-fallowed, clovered, and plastered, and got up the name of the farm, sold it, and bought a better farm in Red Hook. The soil of that was sandy and dry. I managed it as I had done the other. My Dutch neighbours taught me something about raising wheat.

I next bought a farm in the town of Scho-dack, Rensselaer county, N. Y. After living there some years, I bought a piece of worn-out land, about thirty acres, adjoining the farm, of a sandy and cobble-stone soil. Soon after planting, I broke it up, and gave it a good coat of plaster, harrowing it over several times in the course of the summer, kept it clean from weeds, and in the fall sowed it with wheat, and had a good crop. I stocked it down in the spring with clover. It is called a good lot to this day.

I merely tell this that farmers need not be afraid to purchase what is called "worn-out land," provided it is not too wet. Let farmers manure as much as they can. I now live where we need but little manure; but "thorns and thistles shall the earth bring forth, and in the sweat of thy face shalt thou eat bread all the days of thy life." From this there is no escape.

WM. CANFIELD.

Granville, Ohio, March, 1847.

Transplanting Fruit Trees in the Spring and Autumn.

FIRST prepare the ground where they are to be put, so that water will not remain on or near the roots. Examine the roots of the tree before planting, and *cut out* all rotten or defective roots, and *cut in* (shorten) all that are bruised or otherwise injured, to sound wood above the wound. Be careful not to plant too deep, as this may be fatal to your tree.

If the tree does not put out shoots in the spring, at the usual time, or as soon as others do that were planted at the same time, give it one good watering at the roots, and no more while it remains in a dormant state; but if the bark remains fresh, or does not turn black, *wash the head and body* with a water pot or syringe every evening at sun-down, until it begins to shoot or grow, when you may cease watering the head, and water the roots if required. I have had trees to remain until the last of July without putting out a leaf or shoot of any kind, and after that become as fine specimens as any in my garden.

No manure should be put to fruit trees, except it be a little vegetable manure, quite rotten, and that mixed with the earth that is to cover the roots. The question is frequently asked, whether it be best to plant fruit trees in the spring or autumn. This, in this latitude, must depend on the *soil* into which they are to be put. If the soil be a wet, clayey one, it is best to plant in the spring; but if it be a light, gravelly soil, the autumn is preferable, because you gain four or five weeks in the growth of your plant in the spring.

If water be allowed to remain about the roots of trees that are recently planted, and are not growing, it will probably rot them by becoming stagnant and putrid. Trees should be planted therefore, so that the water will run over and off the roots, which is all they require to afford them nourishment.

Watering the head and body of a tree that is tardy in putting forth its shoots, is the safest, and indeed the only sure mode of bringing them out, while a continued watering of the roots is almost sure destruction to them.

Trees planted on a south wall or fence, that do not put out shoots in due season, should be covered for several hours, when the sun is out, if the weather be warm. The leaves may be considered a sort of suction pump, which draws up the moisture from its roots and produces its increased growth, whereas a tree without leaves, and that is not already attached to the ground, has no means of carrying off the moisture from the roots. For example, if two branches of equal size and weight, the one with leaves and the other without them, are placed in vessels containing an equal quantity of water, and exposed to the sun, the one having leaves will take up the greater part of the liquid, while the other will consume comparatively little.

Some ten years ago, I imported from Paris two hundred and ten pear trees on quince stocks, whose roots, on their arrival, I found

to be entirely black and dead. I shaved off with a drawing knife all the roots down to the stump. These I planted in trenches, tying them to cross-bars to keep them firm, and then filled up the trench with good soil. The heads and bodies of these trees were regularly washed in dry weather until they began to sprout, which most of them did in abundance during the summer, and I finally saved out of the whole number, one hundred and seventy-four, which became as well rooted and as good trees as any in my garden.

This has happened more than once. Three or four years ago, I imported among other trees, twenty plum trees, from six to seven feet high, the heads of which had been budded the previous year in France. These buds had grown from nine to twelve inches long, and were perfectly fresh when they arrived; but the roots on examination were found entirely dead. Two of these I gave away. One was good for nothing, and the other seventeen I planted in my garden, having cut out all the roots that had fibres, they being entirely dead. One of my men said I might as well plant my walking stick. Sixteen of these are now flourishing trees, well grown and well rooted, new roots being induced by means of washing the upper part of the tree.

S. G. PERKINS.

From the Kelo Chronicle.

Potatoes and Lime.

MR. OASTLER has published the following letter—an answer to a question put by him to a farmer and great potatoe grower in Yorkshire, and who had been unusually successful in the culture of the potatoe:

King's Villa, near Pontefract, March 1st.

MR. OASTLER,—Dear Sir: I was from home when your letter arrived. I now sit down to let you know how I produced, for the last two years, above 300 bushels of good sound potatoes to the acre. First, get the land dry and clean, and on it put five or six tons of lime fresh from the kilns; slack it as soon as you can; then spread it in its quick state, and immediately harrow it well in, so as to incorporate it well with the soil; then draw your ridges, plant your sets, put the manure upon the sets, and cover up. If you cut your sets, I would advise you to cut them into a basket of quick lime, as it dries up the moisture and prevents either insects or fungi from attacking the seed. By adopting this plan I have never failed in producing good sound potatoes; and believe for quality

and quantity I have not been exceeded this year, at least not in our part. I have at present about one hundred loads of as beautiful potatoes as were ever seen, suitable either for use or sets. I shall be happy to furnish you any information on this subject, as I think it a national one. I intend to grow a greater quantity this year, as I have no doubt with proper care any one may do. I am one of your disciples.

J. BOTTOMLEY.

THE WHITE OAK.—A picturesque ruin of a White Oak, "is standing in Brighton, where the road called Nonantum street, crosses that from Boston to Newton Corner. At the surface of the ground, it measures, this first of October, 1845, twenty-five feet and nine inches in circumference; at three feet, it is twenty-two feet four inches; at six feet, fifteen feet two inches. It tapers gradually to the height of about twenty-five feet, where the stump of its ancient top is visible, below which point four or five pretty large branches are thrown out, which rise twenty or thirty feet higher. Below, the places of many former limbs are covered over by immense gnarled and bossed protuberances. The trunk is hollow at the base, with a large opening on the southwest, through which boys and men may easily enter. It had, probably, passed its prime, centuries before the first English voice was heard on the shores of Massachusetts Bay. It is still clad with abundant foliage, and, if respected as its venerable age deserves, it may stand, an object of admiration, for centuries to come."—*Hovey's Magazine of Horticulture.*

Exportation of Ice.

A FRIEND in Boston writes us some corrections and some additional details regarding the ice business, which will interest our readers.

"To Frederick Tudor, Esq., belongs the whole merit of introducing abundant supplies of American ice into tropical countries. In the year 1805, forty years ago, Mr. Tudor took passage in a brig belonging to himself, with his first adventure of this kind. From that time to this he has pursued the undertaking with the most invincible energy. His exertions have at last been crowned with the most complete success. The New England ice is now, summer and winter, shipped to encounter a voyage of 16,000 miles—to cross the equator twice—and to be on the way between four and five months! The great ice-houses of this gentleman in the East Indies are always stocked, and the

supplies in Calcutta, Madras, and Bombay, are always kept up from year's end to year's end.

"The source of the main supply of ice is not *Wenham Pond*—called *Wenham Lake* in England,—but *Fresh Pond*, five miles from Boston. After this, as the business has increased, additional supplies have been taken from *Spy pond*, about the same distance. Then comes *Long pond*, and the last or latest which has come into use, is *Wenham pond*. All these ponds are full of fine water, and give the purest ice.

"There may be about one hundred and fifty cargoes of ice shipped the present year, and the business appears every year to be extending. Mr. Tudor's enterprise, as you will readily see, not only contributes in a high degree to the comfort and luxury of thousands, in climates where pure ice was hitherto an unknown thing, but also now furnishes, and will long continue to furnish, employment to great numbers, both at home and abroad, whose labour is put in requisition by the various requirements of the 'Ice business.'"—*Downing's Fruit Culturist*.

Painting Houses.

CHARLES DICKENS, in that unlucky visit to America, in which he was treated like a spoiled child, and left it in the humor that often follows too lavish a bestowal of sugar plums on spoiled children, made now and then a remark in his characteristic vein of subtle perceptions. Speaking of some of our wooden villages—the houses as bright as the greenest blinds and the whitest weather-boarding can make them, he said it was quite impossible to believe them real, substantial habitations. They looked "as if they had been put up on Saturday night, and were to be taken down on Monday morning!"

There is no wonder that any tourist, accustomed to the quiet and harmonious colour of buildings in an English landscape, should be shocked at the glare and rawness of many of our country dwellings. Brown, the celebrated English landscape gardener, used to say of a new red brick house, that it would "put a whole valley in a fever!" Some of our freshly painted villages, seen in a bright summer day, might give a man with weak eyes a fit of the ophthalmia.

We have previously ventured a word or two against this national passion for white paint, and it seems to us a fitting moment to look the subject boldly in the face once more.

In a country where a majority of the houses are built of wood, the use of some

paint is an absolute necessity in point of economy. What the colours of this paint are, we consider a matter no less important in point of taste.

Now, genuine white lead,—the colour nominally used for most exteriors—is one of the dearest of paints. It is not therefore economy which leads our countrymen into such a dazzling error. Some mistaken notions, touching its good effect, in connection with the country, is undoubtedly at the bottom of it. "Give me," says a retired citizen, before whose eyes, red brick and dusty streets have been the only objects for years, "give me a white house with bright green blinds in the country." To him, white is at once the newest, cleanest, smartest, and most conspicuous colour which it is possible to choose for his cottage or villa. Its freshness and newness he prizes as a clown does that of his Sunday suit, the more the first day after it comes from the tailor, with all the unsullied gloss and glitter of gilt buttons. To possess a house which has a quiet air, as though it might have been inhabited and well taken care of for years, is no pleasure to him. He desires every one to know that he, *MR. BROADCLOTH*, has come into the country and built a new house. Nothing will give the stamp of newness so strongly as white paint. Besides this, he does not wish his light to be hidden under a bushel. He has no idea of leading an obscure life in the country. Seclusion and privacy are the only scare crows of his imagination. He wishes every passer by on the river, rail-road or highway, to see and know that this is *MR. BROADCLOTH's* villa. It must be *conspicuous*—therefore it is painted *WHITE*.

Any one who has watched the effect of example in a country neighbourhood, does not need to be told, that all the small dwellings that are built the next season after *MR. BROADCLOTH's* new house, are painted, if possible, a shade whiter, and the blinds a little more intensely verdant—what the painters triumphantly call "French green." There is no resisting the fashion; those who cannot afford paint, use whitewash; and whole villages, to borrow Miss Miggs' striking illustration, look like "whitenin' and supelters."

Our first objection to *white*, is, that it is too glaring and conspicuous. We scarcely know anything more uncomfortable to the eye, than to approach the sunny side of a house in one of our brilliant mid-summer days, when it revels in the fashionable purity of its colour. It is absolutely painful. Nature, full of kindness for man, has covered most of the surface that meets his eye in the country, with a soft green hue—at once the

most refreshing and most grateful to the eye. These habitations that we have referred to, appear to be coloured on the very opposite principle, and one needs, in broad sunshine, to turn his eyes away to relieve them by a glimpse of the soft and refreshing shades that everywhere pervade the trees, the grass, and the surface of the earth.

Our second objection to white is, that it does not harmonize with the country, and thereby mars the effect of rural landscapes. Much of the beauty of landscape depends on what painters call *breadth of tone*—which is caused by broad masses of colours that harmonize and blend agreeably together. Nothing tends to destroy breadth of tone so much as any object of considerable size, and of a brilliant white. It stands harshly apart from all the soft shades of the scene. Hence landscape painters always studiously avoid the introduction of white in their buildings, and give them instead, some neutral tint—a tint which unites or contrasts agreeably with the colour of trees and grass, and which seems to blend into other parts of natural landscape, instead of being a discordant note in the general harmony.

There is always, perhaps, something not quite agreeable in objects of a dazzling whiteness, when brought into contrast with other colours. Mr. Price, in his *Essays on the Beautiful and Picturesque*, conceived that very white teeth gave a silly expression to the countenance—and brings forward, in illustration of it, the well known *soubriquet* which Horace Walpole bestowed on one of his acquaintances—"the gentleman with the foolish teeth."

No one is successful in rural improvements who does not study nature, and take her for the basis of his practice. Now, in natural landscape, anything like strong and bright colours is seldom seen, except in very minute portions, and least of all pure white—chiefly appearing in small objects like flowers. The practical rule which should be deduced from this, is, to avoid all these colours which nature avoids. In buildings, we should copy those that she offers chiefly to the eye—such as those of the soil, rocks, wood, and the bark of trees,—the materials of which houses are built. These materials offer us the best and most natural study from which harmonious colours for the houses themselves should be taken.

Wordsworth, in a little volume on the *Scenery of the Lakes*, remarks that the objections to white as a colour, in large spots or masses, in landscapes, are insurmountable. He says it destroys the *gradations* of distances, haunts the eye, and disturbs the repose of nature. To leave some little con-

solation to the lovers of white lead, we will add that there is one position in which their favourite colour may not only be tolerated, but often has a happy effect. We mean in the case of a country house or cottage, deeply imbowered in trees. Surrounded by such a mass of foliage as Spencer describes,

In whose enclosed shadow there was set
A fair pavilion scarcely to be seen,

a white building often has a magical effect. But a landscape painter would quickly answer, if he were asked the reason of this exception to the rule, "it is because the building does not appear white." In other words, in the shadow of the foliage by which it is half concealed, it loses all the harshness and offensiveness of a white house in an open site. We have, indeed, often felt, in looking at examples of the latter, set upon a bald hill, that the building itself would, if possible, cry out,

"Hide me from day's garish eye."

Having entered our protest against the general use of white in country edifices, we are bound to point out what we consider suitable shades of colour.

We have said that one should look to nature for hints in colour. This gives us, apparently, a wide choice of shades, but as we ought properly to employ modified shades, taken from the colours of the materials of which houses are constructed, the number of objects is brought within a moderate compass. Houses are not built of grass, or leaves, and there is, therefore, not much propriety in painting a dwelling green. Earth, stone, bricks, and wood, are the substances that enter mostly into the structure of our houses, and from these we would accordingly take suggestions for painting them.

Sir Joshua Reynolds, who was full of an artistical feeling for the union of a house with its surrounding scenery, once said, "If you would fix upon the best colour for your house, turn up a stone, or pluck up a handful of grass by the roots, and see what is the colour of the soil where the house is to stand, and let that be your choice." This rule was not probably intended to be exactly carried into general practice, but the feeling that prompted it was the same that we are endeavouring to illustrate—the necessity of a unity of colour in the house and country about it.

We think, in the beginning, that the colour of all buildings in the country, should be of those *soft and quiet shades*, called neutral tints, such as fawn, drab, gray, brown, &c., and that all positive colours, such as white, yellow, red, blue, black, &c., should always be avoided; neutral tints being

those drawn from nature, and harmonizing best with her, and positive colours being most discordant when introduced into rural scenery.

In the second place, we would adapt the shade of colour as far as possible, to the expression, style, or character of the house itself. Thus, a large mansion may very properly receive a somewhat sober hue, expressive of dignity; while a country house, of moderate size, demands a lighter and more pleasant, but still quiet tone; and a small cottage should, we think, always have a cheerful and lively tint. Country houses, thickly surrounded by trees, should always be painted of a lighter shade than those standing exposed. And a new house, entirely unrelieved by foliage, as it is rendered conspicuous by the very nakedness of its position, should be painted several shades darker than the same building if placed in a well wooded site. *In proportion as a house is exposed to view, let its hue be darker, and where it is much concealed by foliage, a very light shade of colour is to be preferred.*

Wordsworth remarks, in speaking of houses in the Lake country, that many persons who have heard white condemned, have erred by adopting a *cold slaty* colour. The dullness and dimness of hue in some dark stones, produces an effect quite at variance with the cheerful expression which small houses should wear. "The flaring yellow," he adds, "runs into the opposite extreme, and is still more censurable. Upon the whole, the safest colour, for general use, is something between a cream and a dust colour."

This colour, which Wordsworth recommends for general use, is the hue of the English freestone, called *Portland stone*—a *quiet fawn* colour, to which we are strongly partial, and which harmonizes perhaps more completely with all situations in the country than any other that can be named. Next to this, we like a *warm gray*, that is, a drab mixed with a very little red and some yellow. *Browns* and *dark grays* are suitable for barns, stables and outbuildings, which it is desirable to render inconspicuous—but for dwellings, unless very light shades of these latter colours are used, they are apt to give a dull and heavy effect in the country.

A very slight admixture of a darker colour is sufficient to remove the objections to white paint, by destroying the *glare of white*, the only colour which reflects *all* the sun's rays. We would advise the use of soft shades, not much removed from white, for small cottages, which should not be painted of too dark a shade, that would give them an aspect of *gloom*, in the place of *glare*. It is the more

necessary to make this suggestion, since we have lately observed that some persons, newly awakened to the bad effect of white, have rushed into the opposite extreme, and coloured their country houses of such a sombre hue, that they give a melancholy character to the whole neighbourhood around them.

A species of monotony is also produced by using the same neutral tint for every part of the exterior of a country house. Now there are features, such as window facings, blinds, cornices, etc., which confer the same kind of expression on a house that the eyes, eye-brows, lips, &c., of a face, do upon the human countenance. To paint the whole house plain drab, gives it very much the same dull and insipid effect that colourless features—white hair, pale eye-brows, lips, &c., &c.,—do the face. A certain sprightliness is therefore always bestowed on a dwelling in a neutral tint, by painting the bolder projecting features of a different shade. The simplest practical rule that we can suggest for effecting this, in the most satisfactory and agreeable manner, is the following: Choose paint of some neutral tint that is quite satisfactory, and let the facings of the windows, cornices, &c., be painted several shades darker, of the same colour. The blinds may either be a still darker shade than the facings, or else the darkest green.* This variety of shades will give a building a cheerful effect, when, if but one of the shades were employed, there would be a dullness and heaviness in the appearance of its exterior. Any one who will follow the principles we have suggested cannot, at least, fail to avoid the gross blunders in taste, which most common house painters and their employers have so long been in the habit of committing in the practice of painting country houses.

Uvedale Price justly remarked, that many people have a sort of *callus* over their organs of sight, as others over those of hearing; and as the callous hearers feel nothing in music but kettle drums and trombones, so the callous seers can only be moved by strong opposition of black and white, or by fiery reds. There are, we may add, many house paint-

* Thus, if the colour of the house be that of Portland stone—a fawn shade—let the window casings, cornices, etc., be painted a light brown, the colour of our common red free-stone—and make the necessary shade by mixing the requisite quantity of brown with the colour used in the body of the house. There is an excellent specimen of this effect in the exterior of the *Delaware House*, Albany. Very dark green is quite unobjectionable as a colour for the venetian blinds, so much used in our country—as it is quite unobtrusive. Bright green is offensive to the eye, and vulgar and flashy in effect.

ers who appear to be equally benumbed to any delicate sensations in *shades* of colour. They judge of the beauty of colours upon houses as they do in the raw pigment, and we verily believe would be more gratified to paint everything chrome yellow, indigo blue, pure white, vermillion red, and the like, than with the most fitting and delicate mingling of shades to be found under the wide canopy of heaven. Fortunately *fashion*, a more powerful teacher of the multitude than the press or the schools, is now setting in the right direction. A few men of taste and judgment, in city and country, have set the example by casting off all connexion with harsh colours. What a few leaders do at the first, from a nice sense of harmony in colours, the many will do afterwards, when they see the superior beauty of neutral tints, supported and enforced by the example of those who build and inhabit the most attractive and agreeable houses, and we trust, at no very distant time, one may have the pleasure of travelling over our whole country, without meeting with a single habitation of glaring and inoffensive colour, but everywhere see something of harmony and beauty.—*Downing's Horticulturist*.

Enormous Grape Vine.

J. J. SMITH, of this city, says in a letter under date of 10th ult., in *Downing's Horticulturist*:

"I have lately made an excursion to Burlington, New Jersey, for the purpose of obtaining the exact measurement of the most extraordinary grape vine I have ever heard of. It stands on a farm called *West Hill*, belonging to my late brother, two miles from the city of Burlington, New Jersey, and the truth of what I am about to relate, may be readily verified, though in print it may really seem incredible. At three feet from the ground, it measures *six feet one inch* round the trunk, and at ten feet high, it is positively *three feet* in circumference! It is a native male grape, and has been the wonder of the neighbourhood, as long back as the memory of man reaches. It is still healthy, and its giant folds run over and cover four trees, one of which is a full sized white oak, and the others are quite large.

"The casual reader as he glances over these unusual dimensions, scarcely realizes the enormity of this vine. Let us try if we can, to make it comprehensible, by a comparison or two. A string six feet one inch long, will enclose two tolerably corpulent people; and these dimensions are as large as a good sized washing tub. You may thus form an idea of its great growth. This vine

grows near a springy soil on upland, its roots no doubt penetrating to the water. May not this teach us a lesson, to give the root-lets, wherever it is possible, access to a spring or running water; it may be a question too, whether we do not cut down our vines too much. I observed frequently in England, that a whole house was devoted to a single vine, generally of the Black Hamburgh, and I think they uniformly bore the finest grapes; to carry a single vine over a large grapery, would of course require several years of judicious trimming and management."

Renovation of Worn-out Land.

Laurel Factory, March 29th, 1847.

To the Editor of the *American Farmer*:

DEAR SIR,—I have frequent letters from different parts of this State and Virginia, asking my experience as to the effects of different manures—particularly guano—and of my success in renovating these worn-out lands, the *modus operandi*, &c.

Now my farming operations being quite a secondary consideration in my general business, I cannot spare the time from my other occupations to answer in detail these various communications, and therefore have concluded to reply to them generally through your very valuable paper, and hope it may reach through this channel every one of my correspondents. For to this paper, and other agricultural publications, together with a natural fondness for the pursuit, I am indebted for whatever success I have met with.

You know my whereabouts in this desert of old fields, gullies and poverty grass, and are well acquainted—as who is not, who has ever travelled from the city of Baltimore to the seat of Government—with the total barrenness of the land, generally. I, therefore, need say but little on the general character of the land to start with; and will begin by giving the reasons for my first attempting, what appeared at that time, a Herculean task, the renovation of these barren old fields.

Having been reared amidst the green fields and lowing herds, in one of the most fertile regions in the State of New York, I could not look upon the barren face of this country, without its producing a feeling of melancholy. I came to the conclusion it would never do for me, to plant myself down here with the expectation of making it a permanent residence, with such a prospect always before me; I therefore resolved either to change the general aspect of the country, in this respect, or leave it. The former ap-

pearing the most feasible, I made the effort, and I have the satisfaction to say, that as far as the vision extends from my residence, I have succeeded.

This country with all its faults, has redeeming qualities. Favoured with Heaven's greatest blessings, universal health and a never-failing supply of the purest spring water—with a soil possessing naturally the elements of fertility, a beautiful rolling surface covered with clumps of trees, which for richness and variety of foliage, and beauty of proportions,—for landscape or lawn purposes, cannot be surpassed in the world,—it is not indebted to heaven for its forbidden appearance, but to that reckless system of cultivation too generally to be found in most of the Southern States.

There are two ways, Mr. Editor, of renovating these old fields, one I see recommended frequently in your very valuable work—that is, to sow broadcast over the land some five bushels of ashes with a bushel of plaster per acre, to be followed by ploughing in of green crops, &c. Now this may suit with some latitudes, but it won't do here, where a good north-west wind after a frost in November will sweep into the fence corners every particle of vegetation from the face of these old fields. The labour alone, which would be required in the ploughing and re-ploughing, &c., on this method, would, if hired out by the day to work upon some public work, purchase ashes enough to do in one year what would require five years to accomplish in this slow method.

Another plan is to go at it *Taylor fashion*, and do the thing right up! As an example of this latter plan, I will give you the result of an experiment made last year upon one of these "old fields," and I take this merely because it is now fresh before me, having just finished threshing out the crop grown upon this field, and not because it shows any more favourable results than twenty other experiments of which I have memoranda.

I purchased last year an addition to my farm, of 365 acres of land; on this tract there was one lot which lay in upon the lands I had already improved, in such manner as to injure the appearance of the whole. In the spring of 1846, I resolved to make an attack upon this old field, and to satisfy myself still further of the cost of such improvement, I had it surveyed and platted by a regular surveyor, and found the contents to be 27 acres—out of which there was taken for a house, lot and road, one acre, leaving 26 acres to be cultivated. This field was tenanted out in the year 1845 to a very worthy man, who cultivated it in corn, and

I have his word for the product,—and I am sure no person who saw the crop growing will ever think of questioning the amount—was 25 bushels of nubbins, or less than five bushels of corn per acre. This, by the way, is about the character of many crops grown in this neighbourhood.

In March, 1846, as soon as the grounds would do to haul over, I brought out the right arm of my resources, my flying artillery, in the way of mule teams, loaded to the muzzle from my *manure heap*, and made a regular discharge upon my greatest enemy, the washed and gullied side hills. These I peppered thick and strong. I then put in the ploughs, and flushed the whole field up deeply, following in the stiff clay parts with the subsoil plough. I then brought out my other forces, in the shape of leached ashes,—which cost delivered on the ground \$10 per hundred bushels—and spread over the whole, *manured parts and all*, at the rate of 100 bushels per acre, pulverizing the ground and mixing well with the harrow. Sowed two and a quarter bushels of oats per acre, harrowed again—sowed one peck of clean fresh clover seed per acre, and followed with roller. This was all done in the right way, and *just at the right time*. After the oats were well up, I put the finishing stroke to the whole battle, by bringing up my *corps de reserve*, in the shape of *guano*. The first moist day, all spots that appeared to have been missed in the spreading of ashes, or appeared weak, I dressed over with about 200 pounds of guano mixed with one bushel plaster per acre, to the amount of about two acres in spots, and spread over the whole field plaster at the rate of one bushel per acre. You will say, perhaps, this is going it rather strong, and requires more capital than can generally be commanded by the most of our farmers. There are very few, however, who have not some half dozen or more worthless colts eating their heads off every year, to say nothing about the hogs and horned cattle, which might be disposed of in some way to raise \$100, which would improve permanently ten acres of land with leached ashes—or they might borrow \$100 for twelve months, with almost a certainty of returning it from the increased product on the first crop, as you shall see by the following result of the above experiment.

I have just finished threshing out and cleaning up 1,217 bushels of first rate oats, grown upon this field of 26½ acres—an average of 45½ bushels per acre, and no Chester county land ever presented a finer coat of grass. This year it will be cut for hay,

and I would not thank any man to insure me two tons per acre. Now for the figures:

DEBIT.

2,600 bushels of ashes,	\$260 00
50 wagon loads of manure on gul- lied places,	50 00
400 pounds of guano,	8 00
56½ bushels of seed oats—40,	23 40
6½ bushels of clover seed,	32 50
Ploughing, seeding, harvesting, &c.,	100 00
	\$473 90

CREDIT.

1,217 bushels oats—40 cts., worth now in market 48 cts.,	\$486 80
Pasture last fall for my milch cows,	00 00
Straw in abundance—an offset for thresh- ing, &c.	

Mr. Editor, what is this land worth now—the improvements of which cost nothing,—more than it was when it would produce but five bushels of poor corn per acre? Why, if there was nothing to go to the credit side of the account but the improvement alone, it would in my estimation be cheap—dirt cheap. This field, with judicious cultivation, is now permanently improved, as I can show by many years experience in the same kind of treatment.

I am frequently asked, "how do you bring up those old worn out lands so quickly?" The answer is found in the above example.

I have tried guano, and almost every kind of manure, in almost every way, and have always found them to pay well, *when I put enough on*—stable manure, leached ashes and guano—pretty much in value as I have named them.

Will the improvement of these worn out lands pay? is a question I am frequently asked. I have every reason to believe they will. I commenced the improvement of the place I now live on in the year 1839. At that time I had not pasture sufficient for one poor cow, and have followed it up ever since, giving it just as much of my individual attention as could be spared without injury to my other more legitimate business, and in fact just as much as was necessary to relieve the mind from the harassments of a more perplexing occupation. The result is, that instead of not having one spear of green grass to refresh the eye, or tickle the palate of the poor old cow, or one single *oasis* in this desert of old fields, to resort to in the hot summer months, I have now hundreds of acres of the improved grasses, and have cut during the past year hay enough to keep, and keep well, 70 head of horned cattle, 35 head of mules and horses, besides sundry sheep, hogs, &c., &c., the mules and horses

being stabled during the year. Night before the last, when my house was shook to the very foundation by the raging elements without, I sat by a cheerful fire and listened to the peltings of the pitiless storm of snow and rain against the windows—it was a cheerful reflection, that out of all my stock there was not one, even to the sucking calf and pet lamb, but was sheltered from its fury, in warm and comfortable stables, and were ruminating upon beds of clean straw.

I sat down upon the spur of the moment to write you a short letter, partly to answer sundry communications on the subject of farming, which I really could not devote the time to reply to in detail, and partly from a sense of duty, that every man owes to the community in which he lives, to give the result of his experience, and let the community separate the wheat from the chaff by their own good judgment.

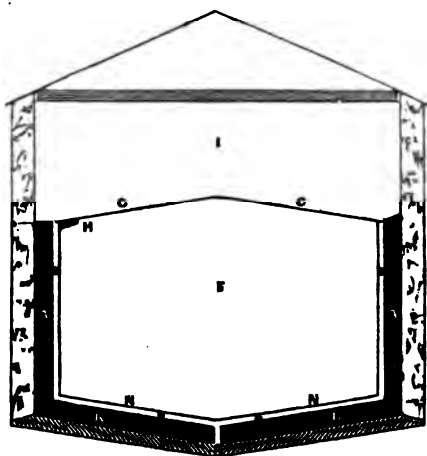
I am fearful the perusal of this will be found tedious. Should it be otherwise, having cleared away the brush, and started the plough, I may, at some leisure moment, give you some further pickings from my memoranda of experiments, and perhaps a description of some of my stock of Devons and Durhams, of which I have a fair specimen of the purest blood in this country.

Let all new beginners keep in view the following *axioms* in farming: Drain your lands well; plough deep and at the *proper time*; pulverize the soil well by repeated ploughing, harrowing and rolling; put on plenty of manure, no matter what it be,—everything in that shape you can scrape up, buy, borrow, or beg; don't spare the seed, and be prodigal in grass seeds; be careful and ascertain, by observation, the *proper time* and *proper manner* of putting them on the ground,—for one is as important as the other.

The question may be asked, what I do with so many mules, horses and horned cattle? They all produce something. The mules are employed in hauling wood, &c., to a population of about 2000 souls here and hereabouts, and in hauling for the factories and shops, and work on the farm. The horses, with the exception of a few for private use, belong to persons connected with the works, and supplied from my loft. The horned cattle supply, in part, the cities of Baltimore and Washington with pure fresh milk, sent both ways from my dairy, daily, via rail-road.

HORACE CAPRON.

OIL CAKE is the compressed husks of linseed, after the oil has been expressed from it.



One of the Greatest inventions of the Age—Kephart's Patent Fruit and Vegetable Preserver.

THE outer columns in the above cut represent walls of stone, enclosing the inner construction.

The light shading at the bottom, descending to the centre, represents the earth.

The dark shadings, A, A, and K, K, represent two boardings, with from six to ten inches space, and this space filled with a substance that will best exclude heat.

F is the Fruit Room, in which articles are to be placed for preservation.

C, C, a floor or cover to the fruit room, made water-tight, with a coat of pitch over its surface to prevent moisture from penetrating.

I, an apartment to be filled with ice supported by the floor, C, C, and designed to contain ice enough, when filled, to last during the whole year.

B, B, and D, D, are spaces around the fruit room, intended for the meltings of the ice on the top floor to pass off. This ice water, as it passes down those spaces around the fruit room, and over the tight floor at bottom, in the space, D, D, serves to absorb any heat which may find its way through the non-conductor, K, K.

O, the outlet for ice water.

H, hatchway or entrance into fruit room.

The fruit room, F, is intended to be below ground, and the ice apartment, I, if desired, can be above; buildings above ground being now generally preferred for ice to those below ground.

It will be seen from the construction, that the non-conducting substances, A, A, and K, K, are designed to prevent the admission of heat from the earth, at the sides and bottom, into the fruit room F; while the ice upon the floor, C, C, acts by keeping the fruit room at a constant uniform temperature, dry, and so cold as to exert a preserving influence upon articles placed therein.

The undersigned having purchased the patent right of the above invention for the United States, excepting the States of New Jersey, Delaware, and Maryland, and the cities of New York and St. Louis, invite the attention of the public to an examination of the scientific principles upon which the above invention is based, as well as its practical utility—and offer for sale patent rights for the construction and use of the Preserver by States, Cities, Counties, towns, or individual rights, upon terms that will induce all interested in the growth or sale of *fruits and vegetables*, or in the *curing and preservation of meats*; also dealers in *butter, eggs, &c.*, to purchase rights and construct *Preservers*.

As will be seen by the above drawing, its success depends entirely upon chemical truths.

The room F, in which fruits, &c., are placed for preservation, will remain the whole year at a constant, uniform temperature, so near the freezing point as to arrest the *rotting* as well as the *ripening* process of fruits, &c., without danger of freezing them. That the fruit room F, will remain at this temperature will be evident from the fact, that the air in contact with the floor C, C, on which the ice rests, becomes nearly

as cold as ice itself. This condensed air will immediately sink, while the air at the bottom of the room, if but half a degree warmer, will rise to the floor C C, and give off its heat; thus maintaining a uniform temperature, corresponding with that in contact with the floor C C.

Articles placed in this Preserver, remain as perfectly dry and free from moisture, as if kept in the best ventilated apartments. The air descending from the floor C C, being always about half a degree colder than the boxes or barrels of fruit, &c., cannot deposit any moisture thereon; it being an established fact, that no object can condense moisture, unless colder than the air coming in contact with said object. It is a theory long maintained by LIEBIG and other eminent chemists, that a temperature, dry, uniform, and near 32° fahrenheit, will arrest the processes of decay which take place in fruits, &c.; but never until the above invention, could the truth of the theory be tested. Two years of experiments have proved the truth of the theory, and established the entire success and utility of the invention; as *fruits, &c., foreign and domestic, viz: oranges, lemons, apples, pears, peaches, plums, grapes, &c.,* as well as the most delicate fruits; also *potatoes, green corn, melons, &c.,* can be kept as long as desired: add to these *butter, eggs, bacon, &c.,* which can be kept throughout the whole year, as fresh and sweet as when first placed in the Preserver.

Fruits, &c., in common temperatures undergo saccharine fermentation, or what is known by the mellowing or ripening process, which is followed by the vinous, acetic, and putrefactive fermentations, which complete the rotting process. A temperature so low arrests the first process towards decay, so that fruits, &c., if placed in the Preserver when first plucked from the tree or vine, will retain all their original juices, freshness and flavor.

It will readily be seen, that the only way in which fruits, &c., can be kept during all seasons of the year, is by the plan offered in this invention, and one of its greatest advantages is, that fruits, &c., can be kept in all climates—not only in the North where ice is produced, but in the South, where it has become an article of extensive commerce; being shipped in large cargoes, buildings must be erected for its reception. For this purpose the room I, will be most appropriate—thus affording the double facility of selling ice from the top, and preserving fruits, &c., below.

All desirous of a further knowledge of the operations of the Preserver, can see one by calling upon P. Kephart, Baltimore, who is

our authorised agent for the sale of rights—or upon the undersigned, *Coates street wharf, near Fairmount, Philadelphia.*

FLACK, THOMPSON & BROTHER.

All communications will receive prompt attention, if addressed either to

PETER KEPHART,
Western Hotel, Baltimore.

Or FLACK, THOMPSON & BROTHER,
Spring Garden Post Office, Phil'a.

June 15th, 1847.

IMPORTANCE OF THE QUALITY OF THE SALT USED IN MAKING BUTTER.—At a late agricultural meeting in Augusta, Maine, Dr. Bates stated that the farmers in Fairfield were in the habit of buying the best description of coarse salt and cleansing it and having it ground, and that this salt they used in the manufacture of butter. The consequence was, the butter made by them had a better reputation and bore a higher price than the butter made in other towns. He held them up as worthy of imitation. He stated that the loss of the butter manufactured in this State was greater in amount every year than the sum raised for the State tax—more than \$200,000. He believed that, if this fact was generally understood, if the people could be made aware of the loss incurred by bad manufacture, we should at once see an improvement in this article, of which so much is produced, and which enters into our daily consumption.—*Maine Farmer.*

PREPARATION OF SEED WHEAT.—By sieves of suitable size, the largest and best grain may be separated. By washing in water, light seeds of various kinds, and the lightest grain, will swim, and may be skimmed off. By adding salt to the water, which will increase its specific gravity, old imperfect grains, and barley and oats will rise to the surface. Then it will be well to steep the seed a day or two in salt and water; after which add half a peck of fresh slacked lime to a bushel of grain, mix thoroughly, that every kernel may become coated with lime. Let it remain half a day, or night, after liming, and then sow. The lime and salt are a remedy against smut, as has been proved in numerous cases. We have never known it to fail, though unprepared seed sown at the time beside the limed, has been smutty.—*Exchange Paper.*

LET each man do his duty, no matter whether in the court—the senate—the field, or the manufactory, and a higher title he cannot hold to the respect and esteem of his fellow men.—*Committee of Parliament.*

The Mule versus the Horse.

C. P. HOLCOMB, an energetic farmer near New Castle, Delaware, said lately to an Agricultural Club, which met at his house, "I mean never to buy a horse again, except for driving, and shall use oxen less than formerly. Four years experience with mules induces me to give them decidedly the preference. The late Nicholas Biddle once made a calculation of the expense to the farmers of the United States of keeping up fences; a sum that would almost exhaust the British Exchequer, but the capital sunk in horses must nearly equal it—and much of this precarious and expensive instrument, I am satisfied may be saved by substituting mules."

Samuel Canby said, "We shall require the largest sized Western mules for our soil, and besides, in many instances, on small farms for instance, where the same team is useful for the farm and road—for going to market or church, the mule will hardly do as a substitute, though I think well of them, and the use of them is certainly greatly increasing."

The Potatoe—American Institute—Farmers' Club.

May 4th, 1847.

COL. EDWARD CLARK in the Chair.

Mr. Meigs, Secretary, read the following paper:

Agricultural Society of Inverness, Scotland—Report.

"Whatever may be the nature of the affection which has overtaken the potatoe, it does not seem to be confined this season to that crop. The beans have had their leaves blackened, and their stems shrivelled by apparently the same cause; and the rottenness in the turnip may safely be ascribed to the same influence. The products of the flower garden have not escaped the affection, for the leaves of the Peony seem to us to have suffered from the same cause. Even forest trees are affected, as the appearance of the Balsam Poplar sufficiently indicates. And wild plants have been observed to suffer in a similar manner—as in the common Fern. So far as we can discern, the mysterious cause of the universal affection is very much 'like the pestilence that walketh in darkness, and that wasteth at noon-day.'"

Little information is communicated regarding the flowers, which had generally decayed in the natural course before the disease had extended itself. With respect to the appearance of the stem and foliage,—the reporters all concur, though expressing themselves differently, in describing the leaves as presenting the appearance which

they generally do, after having been injured by severe frost. In many cases the disease was observed in the tubers, while the growth of the foliage was unchecked, and its appearance unchanged—and in many it was virulent where the stem and leaves appeared the healthiest and most luxuriant! Statements to this effect were made by sixteen observers.

Repeated statements are made of good and healthy tubers being found in a mass of rotten ones!

It is an almost universal opinion that the disease first appears in the stems and foliage of the potatoe, where it is indicated by the growth of certain fungi; but the experience of the present year will perhaps lead us rather to the conclusion, that the disease is deeper seated, and first appears in the root!

On examining the growing plants, the principal or tap root, it is believed, will always be seen to be affected, and this, often before any symptoms indicative of it, have appeared in the stems and foliage!

The taint will be seen extending along the connecting rootlets to the tubers—and this, while the stems and leaves are growing luxuriantly and are free from any perceptible taint, when all at once, the disease reaching the part of the plant above ground, the leaves exhibit the symptoms now so well known. If it should turn out that the disease first appears in the root, we can hardly expect that many of the remedies proposed, as sprinkling the growing plants with lime or other substances will be of use—and it will then also be probable that the cutting over of the stems acts only as a palliative by arresting the progress of vegetation.

Argylshire.—We are an exporting district, and on inquiry I find that about 9000 tons of potatoes are annually shipped to Liverpool, Glasgow, and occasionally to Ireland—from five parishes. Those potatoes which have escaped the disease are of excellent quality!

The seed heads of the potatoe are now rarely formed.

The disease is to be ranked with cholera among men, and murrain among cattle. The chief lineament of its character is independence of action: and that action of the most erratic description. If it seized this neighbourhood, it passed over that! only however to attack another—for another year's crop we must look for healthy seeds, good manure, and a careful separation of the tubers to be planted.

Generally, the newest and freshest varieties have been least affected—and the old cultivated varieties the most.

For ten or twelve years past it has been

rare to see a field of potatoes exhibiting any quantity of flower!

I. Stewart Hepburne, of Colynhalzie, Crieff.

The potatoe as originally brought from Virginia by Sir Walter Raleigh, is stated to have been of a watery or waxy nature—and of a small size, little larger than a walnut. In Europe, for a period of two hundred years, it has been subjected to our artificial process of high culture with much manure, which has greatly changed its chemical and structural condition. By this artificial forcing in higher conditioned land, it has been vastly increased in size, and the relative proportion of its constituent principles altered. The proportion of its starch and sugar, both absolute and relative, has been very greatly augmented, and that of its gluten, as I conceive, proportionably diminished.

The potatoe is an exotic and tropical plant, and although it has been long acclimatized, we know in practice that it is a delicate esculent, requiring a great deal more care in its cultivation and preservation generally, than it has received.

The wearing-out theory is not well established; although no inconsiderable amount of learning has been brought to bear upon it. Raising potatoes from the seed or apples, however, is said to have driven away the curl in some parts of the country forty-five years ago, and quite coincides with the propriety of a vigorous trial being made to raise potatoes from the healthiest seed—notwithstanding those raised from the seed, in this part only a few years ago—as well as in other parts, have equally failed with the long cultivated varieties—from all accounts I can learn. To imitate nature as far as practicable, in raising potatoes for seed, is of vital importance; and planting shallow on the flat surface would appear to comprehend this principle.

No difference between those received from seed and those from tubers.

Some years ago we got a few seed potatoes from Mr. Bruce, tenant, Greenknow, Berwick, they are known by the name of "Jacob's cattle," which had been planted by Mr. Bruce and his father, during the last eighty years, without one solitary instance of failure,—and last year the crop was perfectly free of disease. From repeated experiments in the last five years, we have found that old and long cultivated varieties have been less subject to failure than the new varieties raised from the apple. In point of fact, until we began to raise new varieties from the apple, such a thing as failure or disease was never once heard of!

Potatoes planted early, so as to be ripe by the last of July—all perfectly sound.

About eight years ago I took it into my head that the failure was owing to the potatoe having been so long planted from tubers, and I set about raising them from the seed. I succeeded in raising a very great variety, but selected one I considered far superior to the others, and got a good stock from it. I had more failures from this stock than from any other.

Late planted potatoes have escaped disease.

The great mass of authority goes to establish, that no modification of the disease was observed to result from the condition or kind of manure, and that it manifested itself to an equal extent, and with equal virulence, under all applications, whether of common manure or what have been called special manures. This information is from the most experienced, practical farmers of the country.

The more richly manured, the greater the disease.

That the disease was as prevalent on newly cultivated as on old cultivated lands!

The higher the cultivation and the richer manured, the greater the disease.

On the estates of the Duke of Montrose, potatoes on the north side of a hill all sound—on the south side all unsound! culture, &c., the same on both sides of the hill.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

Spring Budding.

MR. EDITOR,—Having frequently tried spring budding, by inserting buds that had already commenced to grow, without much success, an improvement suggested itself, which I put in practice this spring.

Being in your office early in the present month, before the success of my experiment could be determined, and meeting an especial favourite, *The Horticulturist*, I naturally turned to the very interesting article on this subject, by R. Nelson.

From the fact that he does not mention any method of pruning the scions, there may be less difficulty in doing so generally, than I have found. Spring budding is not new, but because of the difficulty in preserving buds of the tender fruits, it has been less practised. By cutting scions as late in the spring as the season would allow, covering them with snow, and the snow with chaff and straw, to prevent it melting, until the sap ascends, I have succeeded admirably. The buds then inserted in the usual way,

have grown three inches, and not a single failure, except when a blossom bud, instead of a leaf bud, was used. Those who possess the luxury of an ice-house, could preserve scions in it. This I conceive a great improvement on the usual method of burying in the earth.

I have now fulfilled my engagement, and it will always afford me pleasure to contribute my mite to a department to which the Cabinet is willing to allot so large a space as the last number indicates. J. K. E.

May 24th, 1847.

Brick Making.

Of all the arts and handicrafts of man, none has manifested less improvement than the art of making bricks. To convert clay into mud, form it into shape, expose it in the sun, and then bake the bricks in the kiln, seems to have been the mode all the world over, since the days of the patriarchs. True, we have seen several labour saving brick machines, but they operate upon the clay in its wet state, either tempering it to proper consistency, or moulding it into bricks. Not much, however, is gained by this, as all the more laborious parts of the process remain the same. Still the manipulations to and from the drying yard; packing under sheds and thence to the kiln; still the same exposure and risk of the weather and dependance upon the same.

It is to Mr. Nathan Sawyer, of this city, that we are indebted, as the originator of the plan of making bricks by pressure from dry clay, to the perfecting of which he has devoted many years of his life and a large expenditure of money. His first attempt was in 1833, his first patent in 1835, and the first machine was built in Washington, moved by horse-power. Rude and imperfect as it was, it yet demonstrated the principle and established the fact that bricks might be made from dry clay by pressure. This led to the construction of the present machine in Washington, driven by steam power, which has been in successful operation for eight years, and supplied many millions of bricks to the different public buildings, the navy-yard and elsewhere.

The Steam Brick Press in this city, belonging to Mr. F. H. Smith, is the fourth of Mr. Sawyer's invention, each being an improvement upon its predecessor. His first attempt began with a pressure of four tons—this last gives 120 tons to each brick, turning out about 2000 bricks per hour.

Mr. Sawyer's fertile genius has been again at work, and the result has far eclipsed all

former efforts. For simplicity, cheapness, and efficiency, it is all that can be desired. The pressure is given upon an entire new principle, dispensing with cams, levers, toggle, joints, and the ordinary appliances for such purposes. It employs only the upper piston, and yet presents a brick perfect in shape and pressed infinitely harder than by any former machine. The motion is rotary; occupies a space of only six feet in diameter; is comprised of but few pieces, not the tenth in number of those contained in Mr. Smith's, has no complicated small contrivances liable to disorder, and when worked at the slowest motion, makes 3000 bricks in an hour! To crown all, the cost of the machine is about one-fourth of that just mentioned and requires but half the power!

The prejudice that has existed here against the steam pressed bricks, is now nearly if not quite removed. The late report of Messrs. Long and Latrobe; the recent experiments by the Government officers in Washington, and subsequently also at the navy yard, Norfolk, establish the fact that they are strong and durable. All new inventions and innovations upon old habits and long established principles encounter strong opposition, and have a host of prejudices to overcome—witness cut nails, chain cables, dressed flooring, and hundreds of others that may be mentioned. But steam power will ever triumph, and the day is not far distant when in all our large cities, bricks will be made only by machinery.—*Baltimore Patriot*.

HOW TO MAKE HOMMONY.—Wash a pint of grits—particles of flint-corn ground to one-fourth the size of a grain of mustard, with the finer parts of the flour separated by a sieve—in two or three waters, taking care each time to let them settle. When you pour off the water, the grits must be well rubbed with the hands in order to separate them from the finer particles of flour. Then put them into a saucepan with a pint of water slightly salted, and let them boil slowly for nearly half an hour, occasionally stirring the mixture as soon as it begins to boil.

Hommony may be boiled to any consistency that may be preferred, from that of mush to the dryness of rice.

Excellent Hommony Bread.—Break two eggs into a bowl and beat them from five to ten minutes. Add, by continually stirring, a salt-spoon of table salt, four or five table-spoonfuls of hot hommony reduced nearly to the consistency of thick gruel with hot milk, one large spoonful of butter, and a pint of scalded Indian meal squeezed dry. Make

up the mixture into small loaves or round cakes one and a half inches thick, and bake in a brick oven.

Cranberries.

CONSIDERABLE interest has within a few years been manifested in our vicinity, in relation to the propagation of the Cranberry on upland soils. We do not learn that much success has attended the attempts which may have been made. It would rather seem that a naturally moist or boggy soil is best adapted to its growth. Could it be readily cultivated, its delicousness and beauty as a fruit, would always command for it a high price, and make it a profitable crop. —Ed.

THE cultivation of the cranberry continues to excite attention. Those who have engaged in it have generally been successful, and many vines will be set the present spring.

It has generally been thought that there is but one variety of the American bog cranberry. This is a mistake; there are several, differing in form, size and colour from each other. The large roundish, deep red berries are esteemed the best.

In its native state, the cranberry is found growing on the low borders of ponds and streams, in swampy grounds, in damp sands, and in shallow ponds and bogs.

It is most productive on soils composed almost wholly of silicious sand, overflowed with water in the winter and spring, and which continue damp through the season.

Vines set in peat bogs are not productive if at any time during the summer months the surface of the bog becomes dry and hard; but when the surface of the bog is covered with sand, and there is an abundant supply of water during the year, they are productive.

The cranberry is the only cultivated fruit not benefited by the application of manures. In deep mossy bogs it is frequently found growing in situations where its roots do not touch the soil. It is a plant that derives its support almost wholly from the atmosphere and water, and therefore it is, that it flourishes best in sand and vegetable matter that is not entirely decomposed.

The spring of the year is the best season for transplanting cranberry vines. If set in the fall, they are frequently hove out of the ground by the frost, and have to be re-set. There is less danger of setting them too deep than too shallow, and it is now considered the better mode to separate the vines and plant them in drills, drawn about two feet deep.

It has been said that the cranberry, like the native grape, will grow in wet or dry

soils. We have seen a few cranberry vines on uplands, but they produce but little fruit, and that was generally wormy and poor. We do not advise any to try the experiment on a large scale.

The best remedy for destroying the worm which attacks the cranberry plant about the time it is in blossom, is to scatter wood ashes over the vines early in the morning, when they are wet with dew. Fine salt and lime are also said to be remedies.

At the prices which the cranberry has sold several years past, it is the most profitable crop that can be cultivated. The year before last, one of our neighbours sold the produce of one square rod for \$14.—*Yarmouth Register.*

The Sympathy of Birds.

A few weeks ago, I discovered a wren building its nest on the plate of the piazza, and my curiosity induced me to observe its tiny *modus operandi*. Elevating myself until my head was within a few inches of its nest; the little architect soon discovered me, became frightened, flew away and commenced the cry of alarm, at which time I did not see a single bird of any kind; but in less than five minutes there was on one tree with the wren, no less than thirteen birds: the red-bird, mocking-bird, wrens, robins, blue-bird, cat-bird, sparrow, doves, thrush, etc., all assembled and put up their cries of anguish, wrath, distrust, and fear, and even the dove modestly sat and mingled with them her half conscious moan! The domestic fowls, as if aware of the general mourning, joining in chorus with shrieking cries, with the birds, continued about ten minutes. After the apprehension of danger had to some extent subsided, the mob quietly dispersed, and joined in songs of exultation at their deliverance from, as they supposed, imminent danger. It is impossible to describe the scene as it really was; the numerous cries, all on a different key, the skipping from branch to branch, and apparently holding consultation with each other, were to me indescribably pleasing. I have never witnessed such a striking manifestation of the sympathy of birds before, and I have doubts whether or not there is such another case on record.—*Methodist Protestant.*

Insect Slavery.

THE most remarkable fact connected with the history of ants, is the propensity possessed by certain species to kidnap the workers of other species, and compel them to labour for the benefit of the community, thus using

them completely as slaves; and, as far as we yet know, the kidnappers are red, or pale-coloured ants, and the slaves are of a jet black. The time for capturing slaves extends over a period of about ten weeks, and never commences until the male and female are about emerging from the pupa state; and thus the ruthless marauders never interfere with the continuation of the species. This instinct seems specially provided; for were the slave-ants created for no other end than to fill the station of slavery to which they appear to be doomed, still, even that office must fail, were the attacks to be made on their nests before the winged myriads have departed or are departing, charged with the duty of continuing their kind. When the red ants are about to sally forth on a marauding expedition, they send scouts to ascertain the exact position in which a colony of blacks may be found. These scouts having discovered the object of their search, return to the nest and report their success. Shortly afterwards the army of red ants marches forth, headed by a vanguard which is perpetually changing; the individuals which constitute it, when they have advanced a little before the main body, halting, falling into the rear, and being replaced by others. This vanguard consists of eight or ten ants only. When they have arrived near the black colony, they disperse, wandering through the herbage and hunting about as aware of the propinquity of the object of their search, yet ignorant of its exact position. At last they discover the settlements; and the foremost of the invaders, rushing impetuously to the attack, are met, grappled with, and are frequently killed by those on guard. The alarm is quickly communicated to the interior of the nest; their antagonists sally forth by thousands; and the red ants rushing to the rescue, a desperate conflict ensues, which, however, always terminates in the defeat of the blacks, who retire to the innermost recesses of their habitation. Now follows the scene of pillage. The red ants, with their powerful mandibles, tear open the sides of the ant-hills and rush into the heart of the citadel. In a few minutes each invader emerges, carrying in its mouth the pupa of a worker which it has obtained in spite of the vigilance and valor of its natural guardians. The red ants return in perfect order to their nest, bearing with them their living burdens. On reaching the nest the pupa appears to be treated precisely as their own; and the workers, when they emerge, perform the various duties of the community with the greatest energy and apparent good will. They repair the nest, excavate passages, collect food,

feed the larvæ, take the pupæ into the sunshine, and perform every office which the welfare of the colony seems to require. They conduct themselves entirely as if fulfilling their original destination.—*Newman's History of Insects.*

Endurance of African Horses.

THE Cape horse, for docility, endurance, and sure footedness, will vie with that of any other portion of the globe. The original breed is said to have been Spanish; and those animals which are of a red roan color are supposed to be the hardiest, and to possess most of this blood. It is a common thing among the colonists to travel sixty miles a day, for several successive days, upon a horse newly taken from grass, that, perhaps, has never been stabled in his life, and, most frequently, has never been shod. The hoofs of these horses, probably from the dryness of the climate, or from their having been let run as colts in some stony mountains or plains, acquire such a tough and flinty nature, that shoeing, in the majority of cases, becomes wholly unnecessary. Travellers often accomplish a long day's ride of fifty or sixty miles, only once taking off the saddle, that the horse may roll—which many say does him as much good as a feed of corn—and pick up what little pasture he can, in the course of half an hour, by the road-side. To prevent the creature absconding, a leather thong, or rim, which is kept wound round his neck while under the saddle, is loosened, and his head and knees so closely secured together by means of it, that he is reduced to a hobble, and can be caught at pleasure: this is colonially termed knee-haltering. For courage, as shooting ponies, they cannot be surpassed. They are of middle size, and have no great personal attractions. A canter is their common pace, which they will keep up for a great length of time. Many of them are trained to amble, but a good trotter is very rare. They have of late years been much crossed with Arabian and other imported stock, which has decidedly increased their stature and improved their looks, but whether it has increased or diminished their hardiness is a matter of doubt. Numbers are now exported to the Calcutta and Mauritius markets, for which this breed is more adapted.—*Life in the Wilderness.*

CABBAGES.—Every body knows how to grow these. The Early York is the earliest kind; the Sugar-loaf next; then the Large Early York, which is a remarkably fine cabbage for fall use. The Green Curled Savoy is a very sweet and delicate winter variety,

but not large; the Flat Dutch is a certain and profitable kind, with very firm heads; the Large Drumhead is the largest and most common winter variety; and the Drumhead Savoy is much approved around Philadelphia and other places, for winter use. It is said to be more delicate than the old Drumhead, and equally large. Cabbage seeds, for an early crop, should be sown in the fall, and protected during winter; or sown in a hot-bed in March or April, and transplanted as soon as of sufficient size. For winter use they may be sown in the open ground, any time during May, or the first week in June, or seeds may be dropped in hills, where the plants are to remain. The soil for cabbages must be deep, moist, very rich, and well worked.

Birds and the Bird Law.

BROBBS we shoot the birds which flock around our dwellings, and make the trees lively with their song—or which follow us after the plough, it may be well to inquire pretty closely, whether or not, the war we wage against them be a just one, & whether it be not in opposition to our interests: or—in plain English, whether they do us more good or harm? For ourselves, one of the delights of the farm house—and they are not few in number—over was, to witness around it the different varieties of domestic fowls—to enjoy the life and music in the trees, and the skipping and vigilant search of the bird in the furrow. Our friend gives a good account below of a number of them, and we are desirous they should derive all the benefit possible from it.—Ed.

"THE time of the singing of birds" having come, it is natural to ask, how we ought to receive and treat our visitors. The law has told us, we must not shoot at or kill them, and we must not destroy their nests on any lands but our own. On our own farms they are out of the protection of the law—they have there no security for their lives but our kindly feelings or self interest. No doubt this will be all the security they need, when it is fully understood that they come to us in the most confiding innocence, not intending us harm if they do any, and conferring upon us benefits which no other part of the animal creation can confer. Were there no birds to keep in check the myriads of voracious insects which swarm around us, our country, it may well be believed, would cease to be habitable by man. We may form some idea of the value of birds, from calculating the labours of a single species. Each red-winged blackbird devours on an average fifty grubs a day. One pair in four months consumes more than 12,000. If there are in New England one million pairs of these birds, then they will consume twelve thousand

millions of grubs in one summer. If any one can calculate the amount of injury that such an army of insects might do, he may calculate the amount of benefit which we derive from this single species of birds, for one season only. And this is but one out of a hundred species of birds, whose main business it is, by a wise appointment of Providence, to protect man from his insect enemies.

Let us take a brief review of our friendly auxiliaries.

1. *The Meadow Lark*.—It does one's heart good to hear his sweet song. The gunner should spare him for that alone. His food is insects and berries—not however any berries used by ourselves.

2. *Baltimore Oriole*, or Hanging-bird. In spring his food is almost wholly insects. In cherry time we rather wish he would stay in the woods; and yet he is so busy in catching the pea-bugs, that perhaps he fairly balances accounts with us even then. I have seen him do one piece of mischief that was provoking. He would pick a cherry blossom, lay it on a limb and clap his foot upon it so as to hold it down, and then pick out the embryo cherry from the centre of the blossom. I have often been tempted to shoot the fellow; but as he left blossoms enough, I concluded to let him pass, for the good he does in keeping the peas free from bugs.

3. *Red-winged Blackbird*.—He will generally be seen in the newly ploughed field picking up the grubs. I have given above, an estimate of his services.

4. *Rice Bunting*, or Bob-o-link,—skunk blackbird. His food is crickets, grasshoppers, and ground-spiders.

5. *Crow Blackbird*.—He devours immense numbers of insects, grubs and caterpillars. But he pulls up corn. He is therefore both friend and foe—a foe for two or three weeks; a friend for all the rest of the summer. Professor Kirtland—Zoology of Ohio—makes the following remarks respecting this bird. "He is one of the species against which the efforts not only of idle boys, but our farmers are directed on account of its habits of attacking the Indian corn. It is somewhat vexatious, to be sure, to have this injury done our corn crops; but before the farmer engages in the warfare against these birds, he should take into consideration the fact that they save ten times the amount of corn they destroy. They pick up thousands of insects that would do far greater damage. There are only two short periods while they remain with us that they eat vegetable food; in the spring when the corn is sprouting from the ground, and in autumn when it is mature. The remainder of their summer's

sojourning is spent in rendering us the most essential aid. The farmer should recollect that in destroying even one of these birds, he is committing a direct injury on his own property, as well as injuring the community at large."

6. *Crow*.—He devours several insects, particularly the grubs that eat off the roots of grass. So he does some good. But he makes sad havoc with corn, both young and old. We shall not mourn much if the boys get crows' eggs, or even shoot the birds.

7. *Blue Jay*.—He renders considerable service by destroying insects and caterpillars in great numbers. He eats chesnuts and acorns in their season, and some corn. On the whole, he does us more good than harm. An observer, who found a nest of five young jays, estimated the number of grubs of the chaffer consumed in one day by the pair and family, at two hundred. This in three months amounts to twenty thousand.

8. *Black-cap Titmouse*, or Chickadee, clears our trees of insects—both grubs and eggs. He is very useful in keeping down the canker worm.

9. *Cedar Bird*, or Moss Bird. I have already spoken of this bird in my communication on canker worms, for which as well as caterpillars and beetles, he has an insatiable appetite. He takes some strawberries, currants, cherries, and even early pears. Nevertheless there are but few birds as serviceable as this.

10. *King Bird*.—His principal food consists of beetles, crickets, grasshoppers, and canker worms. He is charged with catching bees. I have seen him fly among them and appear to catch something; and have thereupon shot him. But on examining his crop, I have never found any bees in it. I think this charge against him is not substantiated. He is the most insulting thief in a mulberry tree, that I am acquainted with. But he is a noble spirited bird, as the hawks and crows can testify. I believe we ought to let him live.

11. *Pewit Flycatcher*, or Phebe. He lives on insects. The cows will not give bloody milk, if he is killed. But we shall suffer for our cruelty and ingratitude, if we harm this friendly inhabitant of our cow-houses. Though small in size he destroys an incalculable number of insects.

12. *Pewee*.—There are two species, both of which make insects their sole food.—*Farmers' Gazette*.

Do not keep a horse too fat, or too lean, as either disqualifies him for hard labour.

For the Farmers' Cabinet.

To Prevent Grain from Spoiling.

MR. EDITOR.—I notice in the papers that much of the grain which has been shipped to Europe during the past year, "heats" on the passage. I think this might be avoided by a very simple and cheap process. It is well known that salt has a highly preservative power. It is used successfully to prevent decomposition, even in those bodies most liable to it. Salt owes this preservative power to the soda it contains. Now, if we take the common sal soda, which is so much used for washing, and reduce it to powder, scatter it through a fine sieve over the grain, and then mix it intimately with it, I have but little doubt that its antiseptic or preserving power would be fully manifested. I have tried it and other similar applications on other vegetable productions with the most complete success. Nor will it at all injure the grain, for any of the purposes for which it may be applied. The utmost that it can do, is to cause corn to wear a reddish brown appearance. But the object of preventing the grain from heating, may be gained without using so much as to cause this change of colour.

Soda being the principal constituent of common salt, is of course not at all injurious when taken into the stomach of men or animals—on the contrary, it is often highly beneficial.

Grain could be much more easily and cheaply treated with this substance, than it could be kiln dried, which is the usual process; and many persons would prefer the grain so treated to the kiln dried—as they say that kiln drying takes away the peculiar flavor of the grain that renders it so palatable to them.

Understand, Mr. Editor, I do not say that this process will prevent the heating, because I never tried it on grain, nor heard that any one else had tried it,—but reasoning from analogy and science, and judging from the experience I have had of its effects on the vegetable productions, I am induced to believe it will prevent the heating of grain. At least it would be well for some of our shippers to try a few barrels in the manner proposed.

The quantity of soda should be regulated by the liability of the grain to heat—the more it is liable to heat, the more soda—the less liable, the less soda. Having had no experience in its use, I could not tell the quantity it would be best to use, but should judge that one ounce of soda to one bushel of grain, would be amply sufficient for the most unfavourable circumstances. *CHEMICO*.
May 29th, 1847.

Agricultural Meeting.

A STATED meeting of the Philadelphia Society for promoting Agriculture, was held on the 2nd inst., at their room, Washington Hall, South Third street, A. S. Roberts, President, in the chair,—present twenty members.

The minutes of the last meeting having been read and adopted, the meeting proceeded to the election of members. J. Francis Fisher, Joseph West, and John R. Gheen, were unanimously elected. Three other gentlemen were proposed for members.

The committee appointed at a former meeting to obtain the necessary information preparatory to holding the Annual Exhibition of the Society, reported favourably thereto, and furnished a list of premiums to be offered on the occasion.

It was resolved, that the Exhibition be held at the Lamb Tavern on the Lancaster turnpike, one mile from the Schuylkill Permanent Bridge, in the early part of October. The following named gentlemen were appointed a committee of arrangement, viz: Robert T. Potts, I. W. Roberts, Dennis Kelly, Aaron Clement, David George, David Landreth, George Blight, Dr. A. L. Elwyn, Manuel Eyre, A. S. Roberts.

A letter addressed to the President of the Society, by Morris Longstreth, Esq., was received, enclosing a circular letter from the Secretary of the Royal and Central Agricultural Society of Paris, transmitted to him by his Excellency, Gov. Shunk, requiring information regarding the potatoe disease. The circular was read, and a committee, consisting of three members, was appointed to obtain information on the subject, and to forward a letter in reply to the Secretary, at Paris.

The Transactions of the New York State Agricultural Society were received through the medium of our President, Mr. Roberts, and the Secretary was directed to tender the thanks of the Society therefor, and also to transmit to that body the Memoirs of this Society.

Dr. Elwyn informed the meeting, that a new and cheap drill machine had been invented by John Moore, of Strasburg, Lancaster county.

A. Clement informed the meeting, that Hussey's Reaping Machine could be seen at his residence in the city, for a short time.

Extract from the minutes.

AARON CLEMENT,

Rec. Sec'ry.

June 7th, 1847.

Disease of the Buttonwood.

A DISEASE, even now but little understood, which made its appearance in the south some eight or ten years ago, has gradually advanced northward, until it has reached, as we noticed last season, a point as far north as Canada, and as far west as Buffalo, and perhaps further.

Its symptoms are, first, a blight and decay of the smaller twigs and branches; then a gradual scantiness of foliage; afterwards a mortality of the larger limbs, commencing at the extremities; which very frequently results—especially in dry soil—in the death of the whole tree. The ravages of this disease, from the general sprinkling of the Sycamore in our woods, and especially by the side of streams of water, has given a blighted and mutilated aspect to the sylvan features of the landscape in many parts of the country. And about Philadelphia and Boston, where, fifty years ago, this tree was quite a favourite in lawns and court-yards, we observe with pain a show of sorry and diseased branches, in the place of the rich canopy of foliage which formerly waved over fine old trunks.

There have been a good many speculations about this disease, and at last the public, we are sorry to see, seem to have made up their minds to abandon the tree to its fate. We regret this, and must beg leave to say a few words more in favour of the time-honoured Sycamore in the day of its misfortune.

As there are insects to be found in the young diseased shoots, it was at first believed by many, that the Sycamore malady was caused by insect ravages. Along with others, we shared in this opinion for some time, until Dr. Harris, of Cambridge, Mass., to whose labours in exposing the character and habits of the insects injurious to vegetation, all American cultivators owe so much, convinced us that the insects found in the Sycamore tree, were those whose habits were well known, and that they were incapable of producing the disease in question.

It is the opinion of Dr. Harris, that the Sycamore disease is a malady caused by some unusual atmospheric state, which affects deleteriously the foliage and young shoots; an opinion which, upon further examination and observation, we are inclined to adopt. The best authorities in Europe at the present moment agree, if they agree at all in the matter, that the *Potatoe* disease is owing to some state of the atmosphere productive of like disastrous effects, to that plant. In both cases, the disease has appeared first in one part of the country, and

has slowly extended itself to all other parts. In both, the system of the tree or plant seems enfeebled, and almost entirely destroyed by a blight, which may be traced to an original disturbance in the healthy action of the foliage.

Whatever may be the final conclusion regarding the Sycamore disease, one thing we know by experiment to be certain, viz: it is not without a remedy. And we therefore beg those of our readers, who may have fine old specimens of Sycamores, which are just attacked, or not yet wholly destroyed, to repeat our experiment, in order to save the lives of their trees.

The plan we allude to, is that of heading in, or shortening, very severely, as early as possible in June, the extremities of all the lower limbs; say, if possible, one-fourth of the extent of the branches, if small, or one-eighth, if large trees. This forces the tree to develop new buds, and a strong set of fresh and thrifty shoots, with large and healthy leaves. This young and vigorous foliage, put forth at this late season, appears to have the power of resisting the *malaria*, so fatal to the ordinary, or normal growth. The tree rapidly makes wood, in a short time presents a rich head of large leaves, and in a few years becomes larger and more beautiful than ever.

Six years ago, when this disease had begun to destroy a large number of Sycamores in one of our more Southern cities, we recommended this course, as an experiment, to be made on four specimens in a row of fine old trees, standing in one of the principal streets. They were very much headed back in the branches, and very speedily put out a fine new growth, which was not again attacked, and are now very beautiful and healthy trees. The other trees that were left to themselves, are now entirely dead, or so miserably bare of foliage, as to appear so.

Since that time we have seen the same treatment pursued in other parts of the country, with similar good results. We therefore make it more public, now, in the hope of saving many specimens, in various districts, that otherwise would fall victims to the malady, to the injury of many a pretty bit of landscape.—*Downing's Horticulturist*.

From the American Agriculturist.

Swarming of Honey Bees.

THE cause of swarming, in all cases, is an excess of population, the bees not having room for all to work to advantage. When bees are placed in very large hives, or when they are quartered in an open room, as is

sometimes done, they never swarm. Swarming may also be prevented by affording additional room, either at the bottom, top, or side of the hive during the swarming season. As a matter of profit, in the increase of stocks, bees should never be placed in rooms, or in hives larger than twelve inches square. If we should have two swarms, the one in a hive two feet square, and the other in a hive one foot square; or in hives of the same solid contents, though differently shaped, the result of the increase of each, at the end of five years, would be, with good management, about as follows: viz., the swarm in the larger hive would about half fill it with comb the first year; the second year it would be completed, but no new swarm. The following spring would find the hive full of comb, but only half full of bees; and it would require the third year to replenish, and so it would continue *ad infinitum* yearly replenishing its lost population, and at the end of fifty years you would have no more bees than when you commenced!

The other hive would be plumply filled the first year; the second year a couple of prime swarms might be calculated on; the third year, we will say, only one swarm each—a very low estimate—we now have six swarms; the fourth year we will double to a certainty, and the fifth year the same, making 24 swarms, while the larger hive “stands alone in its glory,” if not entirely annihilated by the ravages of the moth, the more probable result of the two. In each hive there is but one queen, which is the source of all the increase. The eggs are laid by her. A hive one foot square, is as large as she can use. In such a hive all the workers that she desires to carry out her ends can be fully accommodated. Ten thousand bees to a hive in the spring are all-sufficient—more would be but an encumbrance; hence, we find, that though there be one hundred thousand in a large hive during the breeding season, the following spring finds them departed to that “hourne whence they never return.”

The principal laying of the queen depends much upon the mildness of the spring and much upon the strength of the stock. I am fully satisfied that many of my stocks are in progress of breeding through the entire winter, to some extent. Indeed that such is the case with any populous stock we have abundant proof, in cases where the stock has been destroyed in the heart of winter, as an experiment to test the fact. Where such is the case, there is not that diminution in the number of the bees from fall to spring that ordinarily occurs. In weak stocks, the internal heat necessary for the maturing of the

young brood cannot be produced, and we find that such stocks are compelled to await the approach of warm weather. Here we have the basis of prosperity in a nut-shell. If we cannot so manage that our hives will be populous to their greatest capacity, we may as well give up the idea of perfect success at once.

If the hive be well filled, the queen is fully aware that a large portion of her increase, which the laws of nature compel her to give, must leave her domicile; and she also, through instinct, learns that each swarm must be provided with a queen-regent, like herself, in order to perpetuate their species. These queens, or rather princesses, are produced from the common egg from which issue the workers, or from a common worker-grub, in its primary stages of advancement by a particular treatment. This fact is shown by the mode of artificial swarming, now practised to some extent; the philosophy of which is this: If a piece of comb, containing the young brood of different stages of maturity, be attached to the top of an empty hive, and a quantity of bees be placed therein, having no queen, they will select a certain aged grub from the comb afforded them, and by a particular process of nursing and feeding (the nature of which never was nor ever will be known by us) they will produce a perfect queen, and proceed in their avocation as usual. Without this piece of comb no power or ingenuity of man could cause the bees to perform a single day's labor.

As each swarm requires a *princess* from the old stock, from two to six are generally produced every spring, and such as are not wanted are immediately put to death, as it is entirely out of the question for more than one to exist in the same hive, unless it be during the short period awaiting the issue of a swarm. A very remarkable circumstance occurs in the development of these young princesses; they are so timed in their maturity as to issue from their cells respectively just as they are wanted to take their departure with the swarms. That is, giving them a short period after quitting their cells, to gain strength for the journey, say forty-eight hours. It must here be borne in mind, that where there is sufficient room, as in very large hives, the queen sees no necessity of swarming, and consequently takes no measures to furnish the young princesses.

Indeed it often occurs that she neglects to do this in cases where the greatest necessity exists for them, and as a swarm never leaves in such a case, we find many of our hives loaded with bees, clustering around and below during the entire warm season, which we watch with anxiety from day to day, or

hour to hour, wondering what can keep them spell-bound to their tenement! As the needle invariably points to the north pole, and no human power can change this law of nature, so is the queen-bee the load-stone that draws every bee to her. The broiling rays of a summer-sun, famine, nay, the prospect of a certain death cannot move them. But when a young queen sallies forth on the wing of uncertain destiny, she is the magnet that draws after her a goodly portion of the animated mass. Whither she goes they follow, and as she would gather her subjects around her, preparatory to the journey, she selects a slender branch of some small tree and alights. The bees at once commence clustering around her, perhaps some few minutes before the last have left the hive. Whether the bees ever select a habitation before leaving the hive, is a matter of doubt with me. They sometimes do take at once, after issuing, to some suitable tenement, such as a decayed hive, or some hole in a building, or perhaps they may cluster for a few minutes, and then rapidly take their flight to the forest. All of this may be and probably is concerted after swarming. In confirmation of this, I once had a swarm issue from the hive in which the day previous it had been lodged, and after revolving a long time in the air, settled down upon the very hive from which they had just issued. Now here is an instance where a particular location is fixed upon while on the wing. What caused this singular operation I cannot say, unless it was that they took some dislike to the hive and afterwards concluded to try it again. In order to remove such a difficulty, I took another hive, and as soon as they had fully clustered set it upon a table, and also set the hive with the bees upon its side near it; then with a dusting brush swept them gently down upon the table, and they quietly entered the new hive, and did well.

The number of bees produced from April to July, in a strong stock, may be estimated at 20,000 to 30,000. The first swarms I have generally found to be the largest, though some consider, that in general, the second are so. The third are usually small. The period between first and second swarms is nine days; between second and third, six or seven, and if yet another, the next day or two. The time, however, is dependant upon the weather. If we have hot, sultry weather, the bees mature more rapidly, and are increased in numbers, and consequently throw off swarms faster, but we need never look for a second swarm sooner than a week, and if the weather be cold and wet, it may be delayed fourteen days.

There is a catastrophe attending a rainy

spell of weather during the swarming season, that many persons may not be aware of, which is this: The queen, in laying the foundation of new princesses, calculates upon their maturity at certain periods; when, if the weather should permit, swarms would be ready to issue, according to her principles of the science; but as she cannot foretell the weather, she is often caught with three or four of these royal scions on hand, and the weather does not permit the issue of a swarm for several days, as fine weather for such an operation alone will do.

As these princesses ripen to maturity, a spirit of jealousy begins to be engendered, that sets the whole hive in an uproar. Here is a sad dilemma! The old queen expects to go off with the first swarm, in person, as soon as the weather becomes fine; in the meantime there are several young expectants of assuming the reins of government, who begin to show a spirit of revolt as they grow in strength and age. If this state of things lasts for a week, through rainy weather, their jealousy becomes so furious that a general fight of extermination takes place, and the one that finds herself alive last, assumes the reins of that stock; and if all the princesses have matured, there will be no more swarming that season.

This is another reason why bees do not swarm, when we think they do not know what is for their own interest; but I assure the reader, that when they do not send off swarms, it is for a good and sufficient cause, though we may not be able to comprehend it.

T. B. MINER.

Ravenswood, L. I., May, 1847.

POTATON YEAST.—To two middling sized boiled potatoes, add a pint of boiling water, and two table-spoonfuls of brown sugar. One pint of hot water should be applied to every half pint of the compound. Hot water is better in warm weather. This yeast, being made without flour will keep longer, and is said to be much better than any previously in use.

Economy of Labor-Saving Utensils in a Kitchen or on a Farm.

A LITTLE reflection will show, that to save time is a great gain, while a liberal, though economical expenditure of money is equally so. Labor-saving machines in a farm-kitchen are, therefore, of the utmost importance, as they not only save time, but strength; for instance, if a farmer expends a few dollars in the purchase of a churn so constructed that it will bring butter in five, ten, or twen-

ty minutes, and afterwards work the butter fit for printing, and this only by turning the handle (and there are such churns now in use), he will soon perceive that he has gained more than at first sight he could think possible. If he adds to this, pans for hot water, in which the milk-pans can be placed to prevent the new milk from cooling too rapidly, he will find on churning day, that he has gained one-fifth more butter than by the ordinary method. If such liberal conveniences are allowed the farmer's wife and daughters, as the modern sausage-chopper, that noiseless friend to the farmer's wife, that will silently do in two hours what it would take a man a whole day to accomplish by his single arm, or if a wood-shed in which the kitchen shall open, where a space can be portioned off for barrels and boxes that are to be receptacles for all sorts of things that the women should have in use close to the scene of their labors, and to receive trash that otherwise would be thrown out, littering the yard, and giving an air of unthrift that is always disgusting, and if saved in barrels and carefully collected on a compost heap, will serve as manure for the garden or farm, of the best quality, the farmer himself will find in a short time, that in saving his strength, time, and health, he has gained at the end of the year, at least, the price of the labor-saving machines, and the following year, there will be a clear profit of money as well as time, that can be spent more profitably in lighter and equally useful occupations. If in the above mentioned wood-house, a row of barrels be placed close to the kitchen door, one for ready-made soap, one for soap-fat into which is previously placed 25 pounds of potash, and two barrels of water, one for pig-slop, another for bones and all the worthless scraps and sweepings of the house, and another for chicken-feed, the following results will take place:—The soap being close at hand, can be used, when it is wanted, and there will be no excuse for things not being kept perfectly clean. If the barrel of potash and water be kept close at hand, ten times as much soap-fat will be gathered and saved, as if the barrel were not there; for it will take no more time to throw it there than into the pig's barrel, or to the dog. The potash will prevent the fat from becoming mouldy, or filled with skippers, which it is apt to do when collected in the usual way. The soap will make itself, if stirred once or twice a week. Potash, instead of ley, is most economical, as it is more certain in its results; and the ashes are more valuable on the manure heap or pasture land than what the soap is worth. The pig-slop will be under the mistress's eye, and ingredients nei-

ther too good nor too bad will be put in. The bones and scraps, now so highly prized as manure, may all be saved; and last, not least, dirt is not made, and the time and strength that would otherwise be taken in cleaning and scouring are saved for better purposes; and the chickens may be regularly fed without waste of time.

On a farm, as in a bee-hive, all should be workers, and the drones sent off. The women as well as the men, should work; but all will find that the best economy is to save, whether it be in time or money, or strength, though all should be diligently, carefully, and liberally used, if the farmer wishes to thrive. If from a careful management of time, you save one hour a day, either from unnecessary sleep, pleasure, or ignorance, you will gain in five years, seventy-five days and two hours for profitable improvement of mind or means.—*American Agriculturist*.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, SIXTH MONTH, 1847.

When our last number was issued, many parts of the country—this vicinity among others—were suffering from the effects of a late and cold spring, and also from a drought, which gave to the wheat and grass quite an unpromising appearance. A few days after that time, moderate showers greatly and delightfully changed the face of things, and gave an impulse to vegetation, which immediately threw over it, its richest and gayest, and liveliest colouring. The want of rain had so permanently operated on the grass crop, that it must of necessity be short;—the reports in relation to the wheat, vary considerably in different sections of the country. In some, the crop is promising pretty well—in others, it must be far below an average. But the prospect is now so much better than it was a month ago, that the heart rests lightly and gratefully, in the hope of something like two-thirds of a crop.

A walk down High street of a market day, is poorly calculated to give an impression of scarcity; vegetables are crowded upon our stalls, as well as the different kinds of meat, of the finest quality. All, however, command high prices; and the other day, when our good friend Hatch, from the neighbourhood of Camden, on the opposite side of the river, asked us 62½ cents a quart for his strawberries, we thought they were like butter at 40 cents a pound,—would do right well for an *Editor* to talk about, but one in his senses would hardly think of getting them into his kettle. These strawberries, by the way, were *Hoey's Seedlings*—many of them a full inch in diameter; and their high price was not because strawberries were scarce, but because themselves were really so superior.

Bread stuffs continue high; they vary however with the arrival of every steamer. Flour may be set down at \$8 to \$10 a barrel—wheat \$2 10 to \$2 20—corn was sold a few days ago, at \$1 25, and oats at 70 cents a bushel. The demand abroad appears to be unabated, and must probably continue so for some months to come. Though the population of Ireland may be diminished by starvation and immigration, to the enormous extent of 1,000,000 of souls during the present year, enough will be left behind to call for much of what we can spare of our abundance. And this demand is not confined to Ireland: the wants of many parts of the continent, are compelling the different governments to take the precaution to prohibit the exportation of grain, and open their ports to its free introduction. Europe at large, is seriously threatened—if it be not indeed, already suffering—with a scarcity of food; and the earnest desire of every American will be, that, if the pressure of this dire calamity must be felt there, Divine Providence, by sending us plentiful harvests, may enable us to alleviate it, by feeding their hungry, and clothing their naked. Our grain growing States cannot but prosper under this state of things—how far, and in what way, it may affect the cotton interests, remains to be seen.

The Christian and philanthropist must be sick at heart, that while millions of his fellow men are straitened for their daily supplies of food, and thousands are perishing from starvation, we are adding to the general amount of misery in the prosecution of a war: when in truth, all wars, with their attendant atrocities, should long ago have been banished from Christendom, and be known among us only as a record of history.

Some account and a cut of *Kephart's Patent Fruit and Vegetable Preserver* will be found on page 345, of this number. Ten days ago, strolling out to Fairmount, that noble monument of Philadelphia enterprise, and the pride of us all, even though we may be pretty thoroughly utilitarian in our notions,—we were kindly invited by the proprietors, Fleck, Thompson and brother, to step into their Conservatory and witness the completeness of its operation. The excellent state of preservation in which we found their fruit, oranges, lemons, apples, &c., was a good test of its ability to do what they promise for it. There seemed to be perfectly fresh and sound; the Bell Flowers and Newtown Pippins looking as if they might have been gathered from the tree but yesterday. An apple which we found in our coat pocket after we got home, weighed on the 7th inst. 17 ounces. In cities, as well as to private individuals on their farms, the advantages of this contrivance will obviously be very numerous. Attention to it is invited.

The New York State Agricultural Society will hold its Annual Exhibition at Saratoga Springs, on the 14th, 15th, and 16th of the Ninth month next. Silas Wright will deliver the Address.

The quantity of rain which fell in the 5th month, 1847, was a little more than an inch and a half.

Penn. Hospital, 6th mo. 1st.

1567 in.

In a letter which we find in the *Repository and Colonial Journal*, from J. B. Pinney, speaking of the climate of Liberia, he says, "Our garden Lima bean, I have seen covering by its vines a good sized tree, where it had been growing and constantly bearing for nine years! Sweet potatoe vines are often, when pulled, replanted, and go on to bear more roots."

A vast amount of valuable manure would be thrown upon the fields of our farmers, if means could be devised to save what is now lost in our cities, by the emptying of the gutters. It is calculated that the London sewers pour daily into the Thames more than 100,000 tons of mixed drainage. One thirtieth part of this is regarded as rich, fertilizing solid manure. This amount would annually give a good dressing to 50,000 acres of land.

In reply to a letter, in which we had expressed to a valued correspondent, an apprehension that he made rather too free use of scientific and technical terms for a popular essay in the Cabinet, he pleads in excuse, his conviction that farmers should certainly become acquainted with those terms, and the best way to make them so, is to familiarise them with their use. He thinks if they would conduct their business to the most advantage, they will not only understand their import, but also make their application the means of unlocking to them the concealed riches of their lands. Our correspondent is also of the mind, that into no pursuit can intelligence be more profitably introduced, than into that of the farmer, and gives instances where the intellect as well as muscle is appropriately taxed, and more than ordinary success and thrift have been the result. We throw abroad these remarks of our friend for the general benefit, believing they are well worthy to be inquired into, and practiced upon.

SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

FOR SALE,

AT D. O. PROUTY'S AGRICULTURAL WAREHOUSE,

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$4.50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre, Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

May 15th—1f.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

Philad., Feb., 1847.

M. S. POWELL.
tf.

Agency for the Purchase & Sale of IMPROVED BREEDS OF CATTLE & SHEEP.

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

April 15th, 1847.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES,
Successor to George M. Coates.

May 15th, 1847.

NEW

Horticultural and Agricultural Ware-house,

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y.

R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash price, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Third month 15th, 1847.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Dowling's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN ON THE HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½
JOHNSON'S DICTIONARY OF MODERN GARDENING,	2 25

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

✎ We are prepared to bind books to order.

AFRICAN GUANO.

FINEST quality African Guano, from the island of Ichaboe, warranted genuine. Also a few tons Peruvian For sale by J. B. A. & S. ALLEN,
No. 7 South Wharves, 2nd Oil Store below Market street.

Philadelphia, March 17th, 1847.

Pondrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, \$3 00 per barrel, containing 60½ bushels each, or 40 cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now ready to supply any demand for turnips, buckwheat, &c.

JOSIAH TATUM.

Philada. 6th mo. 15th, 1847.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

TERMS.—One dollar per annum, or five dollars for seven copies—payable in advance.

All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a complete set of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly half-bound and lettered. Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET, AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Linnæus.

Vol. XI.—No. 12.]

7th mo. (July) 15th, 1847.

[Whole No. 150.]

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Cause and Preventives of the Rust in Wheat.

MR. EDITOR.—The rust in wheat is the presence of fungi, which may be seen by the aid of a good microscope. The cause of these fungi, is the presence of free carbonic acid and ammonia in the wheat plant, in greater quantity than can be assimilated by it. About the latter part of June, and from that time onward till November, carbonic acid and ammonia are generated very fast, by the decay of animal and vegetable matter. Water possesses the power of absorbing immense quantities of these gases. I have not any work by me at present—being away from home—to see the exact amount, but I think it is stated that one single gallon of water will condense and absorb upwards of eight hundred gallons of ammonia. In the summer, after a drought of some considerable length, the rain of a small shower, or the rain of the first part of a heavy shower, is highly charged with these gases—and the

CAR.—Vol. XI.—No. 12.

heavy dews, too, are often very highly charged with them. The water of a slight shower, or of a heavy dew, after a short drought, coming in contact with the stalks of wheat, is absorbed by them, and the carbonic acid and ammonia become mixed with the juices of the plant. These gases, coming as they do, in greater quantity than can be assimilated by the plant, and the surplus, if great, so weakening the energies of the plant as to deprive it of the power of expelling them, remain in the pores or other wide cells and vessels. Now, if the seeds of the kinds of fungi that infest wheat are present, the extra carbonic acid and ammonia furnish their proper food, and they immediately germinate and soon grow to full maturity, bursting and splitting the stalk of the sickly wheat in order to get room for their development—thus disorganizing the tissue of the wheat stalk, stopping its pores, preventing the operations that should go forward in it, thereby killing the plant.

Now for the remedy. To prevent this carbonic acid and ammonia from injuring the plant, it is necessary that the carbonic acid should be neutralized, and the ammonia prevented from getting in contact with the wheat stalk in such great quantities—and, also, the stalk should be strengthened as much as possible against such attacks. There are many substances that may be made use of to attain these desirable objects. I will mention a few, and the method of applying them. Pulverize charcoal of any kind until

(361)

it is reduced to the size of marbles and less, then take stone lime and reduce it to powder by slacking it with water; mix equal portions of it and ground charcoal intimately together, and apply the mixture immediately at the rate of ten bushels to the acre. It would be well to put more than the usual quantity on those places where the wheat looks very luxuriant, and less than the usual quantity where the wheat is poor and slender. Or, take four bushels of good hickory ashes, or five bushels of good oak ashes, or more than five bushels of weaker ashes, to five bushels of ground charcoal to the acre. The ashes and lime will not only benefit the wheat crop, even if it is not exposed to the rust, but also the succeeding crop—while the charcoal will do good as long as the ground is cultivated and it remains there, as it never decays, and is always useful. It is the most valuable fertilizer that we have, and is worth more than its weight in gold. I could give you many instances of its wonderful—nay, astonishing—powers, but my limits here will not allow me. One bushel of salt of any kind—say salt from the beef, pork, or fish barrels, or the rock salt used by graziers—reduced to powder, and added to five bushels of ground charcoal and mixed intimately, applied to an acre, will be as efficacious, if not washed away by heavy rains, as the other preparations.

The soda of the salt, the potash of the ashes, and the lime unite with the carbonic acid, and render it unfit for the use of the fungi, and strengthen the wheat plant so as to enable it to assimilate the carbonic acid and ammonia—while the charcoal absorbs both the carbonic acid and ammonia, and prevents the wheat from becoming surfeited with them. It holds these gases subject to the action of the wheat, and if the wheat at any future time finds itself in want of carbonic acid and ammonia—if its roots be in contact with the charcoal, they will draw that held by it. Thus the charcoal performs two very important services, and hence its great usefulness.

Lime that has been air slacked, will not answer in place of that which is fresh slacked, as it has already become partially, if not wholly neutralized, by having already absorbed carbonic acid, and therefore cannot neutralize the carbonic acid which is injuring the wheat.

The proper time to apply the before mentioned preparations, is just about the time the wheat is in full blossom, as that is the time at which the surplus of carbonic acid begins to work the injury. The mode of application is to put them in a bag, and

walking up and down the furrows, sow them as you do grain.

If the season is such that much carbonic acid and ammonia is formed just at the time the wheat is most liable to be injured, it may be necessary to repeat the application at an interval of, say two weeks or less. And a very bad season may require the applications to be repeated several times. These operations, however, will not only save the grain from rust, but will make fine, large, full heads of plump wheat, and will also be useful to the succeeding crops—particularly the charcoal. Care must be taken not to sow the preparations too thick in one place, for they may kill the plants. A top-dressing of ground charcoal at the time of sowing the wheat, harrowed in with the wheat, and rolled over with a heavy roller, will be found highly efficacious in preventing the rust. It should be put on at the rate of twenty-five bushels to the acre.

The preparations I have recommended are very efficacious in preventing the smut in wheat.

CHEMICO.

Roads, Cottages, Flowers, &c., in England.

THE perfection of the roads in England, has been the theme of every traveller through that richly cultivated country. The travelling by coach on the great thoroughfares through the kingdom, has been greatly diminished since railroads have been constructed. In many parts of the kingdom, however, the coach is still in use, and some idea may be formed of the ease and comfort of that mode of travelling which was formerly the pride and boast of every Englishman. Over their level and smooth roads, it is certainly one of the most delightful methods of travelling in *fine weather*. A seat upon the box with the coachman, who is usually intelligent and free to converse with a traveller, and well acquainted with the history of persons and places of interest on his route, renders this a very pleasant method of seeing the country, and learning the incidents which interest a stranger. The coachman has nothing to do with the horses until the time arrives for starting. He examines the team, sees that all is right, mounts his box, and is off at the rate of ten miles an hour, which I found the usual speed on all their roads. When he arrives at the place for changing horses, his lines are thrown down, and he enters the public house, where he is the great man among the hangers on, and as he receives notice that all is ready, mounts his box again, and is off.

The roads usually wind round through the farms, bounded on each side, generally, by neatly trimmed hedges, with trees occasionally interspersed, presenting every few rods new views and interesting scenery, that are truly delightful. The roads are made with the greatest care, generally macadamized, and entirely smooth. They are much narrower than with us, usually through the country, only wide enough for carriages to pass. The custom in England is, for each team to turn to the left, instead of the right, as with us. Its advantages are apparent, as the driver setting on the right, has in view the vehicle which is approaching, and can more readily ascertain how far he can drive with safety. In making their roads great care is taken to avoid hills, they judging, I suppose, that it is not ordinarily much further to go round a hill than to go over it. Foot paths are usually made with care on one or both sides of the road. No danger is to be apprehended from swine, or other animals, as they are not permitted the enjoyment of that license, which seems to be their birthright in our free country. I have never witnessed them running at large in city or country, not even in sweet Ireland.

The cottages which you pass, are generally neat in their outward appearance, very frequently covered with climbing vines, and flowers usually in abundance in the small yard in front, and often in pots at the windows. The cottages are low, the roof frequently not as high as the top of the coach, and a full view of the interior is enjoyed, as they are situated close to the road. Every few miles villages are passed through,—but the term village, as descriptive of our American villages, gives but a faint impression of an English one. Instead of spacious streets, with painted houses of two or more stories, we find, as the road winds around through the narrow streets, small cottages and shops crowded together close to the street, frequently with thatched roofs, with brick or stone floors. A house or two, occupied perhaps by the rector or physician, are somewhat more aristocratic in their appearance. Many of the buildings are whitewashed, and covered with vines, and present, upon the whole, an interesting appearance, but little of the comfort of one of our villages. They appear as ancient, many of them, as their country, and I presume little change has been made in them for centuries.

England truly is the land of flowers. They are to be found everywhere. The markets are filled with them. You meet them in the streets carried about by females and children for sale, and everybody, from the poorest up to her majesty, have a bouquet of

flowers in the button hole or about the person. In the omnibus coach, railroad cars, on the steamer, on change, in the store—in fact, everywhere, they are to be met with. 'Tis delightful thus to witness their taste for flowers. It adds much to the pleasure of every one, and when it can be obtained at so cheap a rate, it is certainly desirable to cultivate a taste for them.

The loads which a team can draw over their roads are nearly twice as heavy as could be drawn over ours with the same power. It will require time and care to bring our roads into such a state as to resemble roads here. It would be well, I think, to begin to approximate to the like condition. Had the labour which has been so unskilfully expended on our roads for the last twenty years, been laid out in macadamizing them, we should, on all our principally travelled roads, have had them as good as the roads are here. It is hoped that improvement, in this respect will not much longer be delayed.—*Cultivator*.

Profits of Farming.

J. G. CHADSEY, of Wickford, R. I., states to the officers of the Rhode Island Society for the encouragement of Domestic Industry, that several years ago he purchased thirty-five acres of poor land, for which, it being near the village, he paid the large sum of three thousand and fifty dollars. Only twenty-five acres of it are "tillageable, including three acres of meadow not ploughed. The remainder is made up of hills and holes, marsh, and beach, with a small strip of wood land." The arable land is described as uneven, with a gravelly soil, much encumbered with small stones. It had been much worn down by repeated croppings without manure. He let it on shares, but got such poor returns that he was sick of his purchase. Finding that he could neither sell nor rent it, he came to the conclusion to try farming himself, though he had "*done nothing at it for nearly forty years*;" but as a "substitute for experience," he says he took an "*agricultural paper*." He began cultivating it himself in 1840. He divided the tillage land into six fields, "from three to four acres each, a new one to be taken up every year, and after taking off three crops, let it lie three years in grass." About two were appropriated to root crops and garden vegetables, which are ploughed every year.

His success has been such, that land, which seven years ago, would not rent for four per cent., now pays twenty per cent., after deducting all expenses. He makes

the following statement in regard to the products and profits of his farm for the year 1846:

10 acres mowing, 19 tons hay, at \$12,	\$228 00
3 acres corn, 124½ bushels sound, at 80 cents, and 9 bushels offal, at 40 cents,	103 20
Corn fodder, \$25, and pumpkins, \$4 50,	29 50
3½ acres rye, 77 bushels, at 80 cents, and straw sold, \$24 81,	86 41
2½ acres potatoes, 348 bushels, at 37½ cents., and 50 bushels small, at 20 cents,	140 50
367 bushels onions, at 50 c. \$183 50	
636 do. carrots, nearly all sold at 19 cents,	156 84
48 do. parsnips, do., at 33½ c. 16 00	
6 pounds onion seed, and 3 pounds carrot seed,	8 00
Peppers and sage sold,	41 88

Produce of 1 acre and 125 square rods, 408 22	
¼ acre summer vegetables, mostly used in family—sold,	7 69
Salt grass sold, standing,	24 00
Milk sold,	47 39
Rent received for two gardens,	6 50
Milk, butter, and summer vegetables used in family,	35 00
	\$1,116 41

EXPENSES.—Paid for labor \$182 62	
Board of labor,	90 00
Molasses for drink, 20 gallons, at 30 cents,	6 00
Manure purchased, and materials for the same,	81 46
Seeds of different kinds,	28 77
Wear and tear of farming utensils,	25 00
Taxes,	11 81
Labor done by himself,	50 00
Cost of cultivation,	475 66
Cost of land, \$3,050; profits 20½ per cent. for use of land,	640 75

Mr. Chadsey states, that he hires all his help except the "little" he does himself. He states that he made 917 pounds of pork, and 560 pounds of beef, which are not included in the account, as they were fattened on part of the produce before estimated. His stock, he says, consists of two cows and a horse. He buys manure from the village. With the horse he does all the "team work," except breaking up the land. His products for the year 1845, amounted to \$913; his expenses were \$368; profits \$545.—*Cultivator*.

Culture of Asparagus.

MANY farmers do not succeed well in their attempts to raise asparagus, from the fact that they do not begin properly, or put it in the right kind of soil. It is a saline perennial plant, and grows in stony or gravelly situations near the sea in many places, and is cultivated to a great extent in the neighbourhood of Paris, and grows to a large size in the vicinity of Ulm and Augsburg on the banks of the Danube, where the soil is a calcareous sand, some three or four feet deep, and the subsoil always saturated with water. Many of the Steppes in the South of Russia and Poland, in the salt region, are covered with this plant, which is eaten by horses and oxen as grass.

Premising that all seeds were originally planted in soils most natural to their vegetation and growth, we learn from the above facts, that two ingredients, viz: sand and salt, are at least necessary for the propagation of this plant: hence in preparing my bed five years ago for the seed, I selected a warm sunny spot: and mixed in freely, sand and coarse manure, saturating it with brine to the depth of two feet. On the top I put three inches of fine loam and vegetable mould: planting my seeds—after steeping them in warm water for twenty-four hours—in rows, the seeds about eight inches apart, and the rows about a foot distant from each other. In the fall of each year, I mix fine manure with the surface soil, and cover the bed with coarse manure from my horse stable; and in the spring remove the coarse part of it and strew on one to two quarts of fine salt, and as soon as the weather becomes warm and dry, irrigate freely every evening. The third season we cut freely for the table, and last year my bed of 5 feet by 30, furnished our table every day, from the middle of May to the last of July, when it was in part allowed to stand and ripen, that the roots might not become exhausted.—*Farmer and Mechanic*.

Honesty the Best Policy.

A FARMER called on Earl Fitzwilliam to represent that his crop of wheat had been seriously injured, in a field adjoining a certain wood, where his hounds, during the winter, frequently met to hunt.

He stated that the young wheat had been so cut up and destroyed, that in some parts he could not hope for any produce. "Well, my friend," said his lordship, "I am aware that we have frequently met in that field, and that we have done considerable injury; and if you can procure an estimate of the

loss you have sustained, I will repay you." The farmer replied, that anticipating his lordship's consideration and kindness, he had requested a friend to assist him in estimating the damage, and they thought, as the crop seemed quite destroyed, £10 would not more than repay him.

The Earl immediately gave him the money. As the harvest, however, approached, the wheat grew, and in those parts of the field that were trampled, the corn was the strongest and most luxuriant. The farmer went again to his lordship, and being introduced, said, "I am come, my lord, respecting the field of wheat adjoining such a wood." He instantly recollected the circumstances. "Well, my friend, did I not allow you sufficient to remunerate you for the loss?" "Yes, my lord, I have found that I have sustained no loss at all, for where the horses had most cut up the land the crop is most promising; and I have therefore brought the £10 back again." "Ah!" exclaimed the venerable Earl, "this is what I like—this is what ought to be, between man and man." He then entered into conversation with the farmer, asking him some questions about his family—how many children he had, &c. His lordship then went into another room, and returning, presented the farmer a check for £20. "Take care of this, and when your eldest son is of age present it to him, and tell the occasion that produced it."

We know not which most to admire, the benevolence or the wisdom displayed by this illustrious man; for while doing a noble act of generosity, he was handing down a lesson of integrity to another generation.

In locating the line of the White Water Canal a few years since, it passed of course, over much valuable property adjoining Cincinnati. Some of this was materially injured, in consequence of rendering parts of the same estate inconvenient of access to the main property, and in all cases the value of the ground itself, furnished no slight claim for losses thus sustained. Assessors were appointed by the Court of Common Pleas, to adjudge injury, and allow damages consequent.

Among others, General Rees E. Price had a large slice taken out of his valuable property, just over mill creek. These were awarded accordingly, and in General Price's case amounted to thirteen hundred dollars.

Two or three years elapsed, which served to put the White Water Canal in operation, and determine its value to the neighbours; and the General began to entertain doubts whether the benefits he should derive from its existence, were not at least equal to the damage it might create. He sat down ac-

cordingly to calculate, and to reflect; and the result was, that he paid back the amount he had received from the Canal Company to its president, alleging that he was convinced he had no right to it.

Even those who are incapable of imitating such illustrious integrity, must admire the magnanimity of spirit it displays.—*North American*.

CULTURE OF THE CUCUMBER.—I will state a fact relative to the planting of cucumbers, which came under my observation, and which is worthy of being known. I shall at least give a further trial myself of its reality, though I cannot conceive there is a doubt remaining on the subject. Last spring, a friend of mine and myself were planting cucumbers at the same time. I was planting mine, as is usual, in gardens, by mixing a small portion of stable manure with the earth, and raising the hill an inch or two above the surface of the ground. Observing it, he jocosely remarked, "Let me show you how to raise cucumbers." Never having much luck in raising them, I cheerfully agreed to his proposition. He commenced by making holes in the earth, at the distance intended for the hills, that would hold about a peck—he then filled them with dry leached ashes, covering the ashes with a very small quantity of earth. The seeds were then planted on a level with the surface of the ground. I was willing to see the experiment tried, but had no expectation of any thing but a loss of seed, labour and soil. But imagine my astonishment,—notwithstanding a drier season was never known, and almost a universal failure of garden vegetables,—when I beheld vines remarkably thrifty, and as fine a crop of cucumbers as any one could wish to raise, and they continued to bear for an unusually long time. I will not philosophize on the subject—but say to all, try it; and instead of throwing your ashes away, apply it where it will be of use, and you will reap a rich reward.—*Ohio Farmer*.

E. BURRITT in his Christian Citizen, says, "Western Farmers! what are you going to do for the Old World next year? Are you going to feed them, or let them die of hunger? If you cannot engage to grow one thousand millions of bushels of Indian corn for them the coming season, and send it over in season, they will come after it themselves, and your prairies will swarm with them, as with an ocean of bull frogs. So be up now, and at it. There will be no potatoes raised here this season, and you must plant corn for half the world."

A Wash for Fruit Trees.

A good deal has been said about the best application for this purpose—one recommending lime, another a solution of soft soap, and another a solution of potash. All these are very excellent, but sometimes fail of being applied, from an unwillingness in the farmer to drive to the village in search of them, or from the false economy which regards the slight expense of procuring them. If there is anything equally beneficial, and within every one's reach, we think it should be substituted, as doing away with the last apology which a lazy man can give for neglecting his trees, and we think that this article may be found in wood ashes, of which every farmer has an abundance. I have tried the solution of black salts, the application of soap, and also that of wood ashes; for large trees with rough bark, the latter is quite as good, if not better than the former. A wash of ashes and water can be made as strong as you please, and if put on some dry day, a good deal of the ashes will remain adhering to the bark, which the subsequent rains wash into the crevices. This wash if applied in the summer time, will, while the ashes remain on the tree, make it offensive and disagreeable to the insects, and deter them from lighting on it; also ultimately makes the bark smooth and healthy.

By those who wish for healthy and productive orchards, too much attention cannot be given to the bark of their trees. We frequently meet with forest trees whose interior has been almost entirely destroyed by fire or decay, and which yet seem healthy and flourishing by virtue of a vigorous bark; and any one who has tried the experiment must have observed how both shrubs and trees, that have become enfeebled by age and neglect, can be rejuvenated by attention to their exterior condition. We don't mean to recommend to any to procure old or large trees for his orchard in place of young ones, but if he has an old apple tree worth improving, by removing the *outside* of the whole bark on it late in the spring, he will find that he has given to the tree much additional vigor. Upon smaller trees and shrubs, a liberal scraping with a trowel and an application of ashes and water will have the same effect.

When trees grow in grassy land, a pretty good way to keep them from being sod-bound, is to remove in the fall the sod two or three feet around the tree, and on this turn about half a wheelbarrow full of manure; the winter rains and snows will wash the strength of it to the fibrous roots. In the spring the manure may be scattered

about under the tree, and in lieu of it, substitute leached ashes. This, beside being beneficial to the tree, prevents the grass from approaching the stem of the tree during the summer; and what grass grows over the ashes is easily removed in the fall.

In conclusion we would say, that the farmer who carries his horse twice a day, finds himself abundantly rewarded for his toil, in the improved strength and appearance of his animal; why don't he carry his trees once or twice a year, and reap a larger reward for the labour and the capital thus invested?—*Minors' Journal*.

Agricultural Survey of Washington Co., N. Y.

We take the following from the *Albany Evening Journal*. Our friends in New York are certainly enterprising and spirited, and we trust this attempt will be attended with valuable results. We are glad to see Dr. Fitch engaged in this undertaking.—*Ed.*

We learn that the N. Y. State Agricultural Society has it in contemplation, to have a full and accurate Agricultural Survey of the different counties of the State, taken so fast as its means will enable it to proceed in a work of this character. The Surveys of the several counties of England and Wales, completed several years since by the British Board of Agriculture, will form the model on which this work will be in a measure conducted. The present flourishing state of the art of agriculture in England, it is well known, has resulted, to a considerable extent, directly from the investigations made and the information acquired by that Survey; and a similar work in this country can scarcely fail to lead to similar auspicious results.

We regard it as no small honour, that Washington county has been selected by the State Society, as the most appropriate locality in which to commence this important work, and that one of our own citizens, Dr. Asa Fitch, has been commissioned to execute it. Such a work, in such hands, we confidently anticipate will result in a report that will redound to the fame, alike, of the writer, of our county, and of the Society under whose patronage it is made. We learn from Dr. F. that he contemplates visiting the several parts of the county the present season, and ascertaining from personal inquiries and observations, all the details of the art of agriculture, &c., as it is practiced at the present day by our most successful and intelligent farmers. That the exact plan and scope of the proposed work may be more definitely known, we take pleasure in laying before our readers

the instructions that have been given to guide him in his inquiries:—

Agricultural Rooms, Albany,
May 13th, 1847.

ASA FITCH, M. D.,—Dear Sir: You have been selected to make an Agricultural Survey of the county of Washington—to collect accurate information in relation to the state of its agriculture, and every subject connected with it—to suggest means of improvement—and to make report with as much exactness as circumstances will admit.

I enclose you a plan of the proposed Survey, adopted by the Executive Committee of the N. Y. State Agricultural Society, which will direct your attention to such inquiries as are deemed most important. Your own experience will guide you in the fulness of examination, and report under the various heads, some requiring from their importance much more extended notice than others.

The reports of Natural History, which have been prepared under the direction of the Legislature, will aid you materially in some branches of the Survey, as many of the inquiries submitted can be answered probably through them, and without as minute personal examination as would otherwise have been necessary.

As this is the first Agricultural Survey which has been undertaken by the State Agricultural Society, and upon its successful result will depend whether the Survey be continued in future years to other counties or not, it becomes of the highest importance that the work should be done with such particularity and care, as will secure a complete and finished return. It is desirable that the survey, when completed, should be embraced in an octavo volume of some 200 pages—but this will depend in some measure upon the extent to which it may be lengthened by subjects of importance which may require particular notice.

The Executive Committee rely upon your ability to perform the work in a manner that will be creditable to the Society, and so as to be an enduring monument to yourself in the future history of the Agriculture of the State.

I am very respectfully, your obedient servant,

B. P. JOHNSON,
Secretary N. Y. State Ag. Society.

*Plan of the Proposed Agricultural Survey
of the County of Washington.*

1. Geographical and topographical description of the County.

2. Geological features, minerals and fossils, nature of the soil, distinguishing that composed of the "northern drifts," or of

transported materials from that produced from the rocks of the immediate neighbourhood.

3. Length of time the soil has been under cultivation; the original growth of timber, and the time it was first cut off.

4. Date of the first settlement of the several parts of the county, and the origin and general character of the settlers.

5. Condition and progress of agriculture from the first settlement to the present time, showing what have been the improvements and causes which have produced them; what have been the staple crops, the mode of their cultivation, and as far as may be practicable, the actual profits of each, at different periods.

6. Present state of agriculture; the several crops cultivated, their respective yields and market value. Also, all industrial pursuits connected with farming, such as the manufacture of maple sugar, how managed in its preparation, &c.

7. Adaptation of crops, as grains, grasses, and roots, to different soils; showing the arrangement which in this respect has been found by experience to be most judicious and profitable.

8. Fruits and fruit trees; having particular reference to the adaptation of the various species to the different soils—mentioned under head No. 2.—and how far the productiveness, health, or longevity of the trees are affected by the nature of the soil, &c.

9. Weeds and pernicious plants, describing those most injurious, whether indigenous or introduced, and giving the most approved modes for their eradication.

10. Insects, describing those which are prejudicial to the farmer, and noticing the most effectual means of preventing their ravages.

11. Implements; having regard to any peculiarity of construction, and noticing any improvements, which may have been adopted in their form, mode of manufacture, or uses.

12. Live stock; horses, cattle, sheep, and swine; showing the numbers of each of these classes kept in the county, their diseases and mode of curing them; the different breeds, and as far as may be, the relative value of each for different purposes; the relative value of horses and oxen for labour on the farm; and any facts in regard to the profits and most economical management of poultry of different kinds.

13. Feeding and fattening animals; having regard to the most profitable modes, and the relative value of different kinds of grain, roots, apples, pumpkins, grasses,—both in their green and dry state—or any plants for feeding labouring animals,—whether horses

or oxen,—milch cows, or for fattening cattle, swine or sheep.

14. Dairies and dairy produce: showing the quantity of butter and cheese produced, the quantity per cow, the best modes of making these articles, and the kind of pasture and food, as well as the general management, which is found most profitable.

15. Wool growing; showing the number of sheep in the county, the breeds, the quantity of wool produced per head, the value per pound of the different kinds of wool, its preparation for sale, and where sold; the number of sheep pastured per acre on different soils; time required for winter feeding; quantity of hay required for carrying a given number of sheep through the winter; most economical mode of winter feeding, whether with hay alone, or with any other fodder, and whether any and what kinds of grain or roots, and in what quantities, and in what manner, are fed to sheep.

16. Manufactures; the kinds carried on in the county, their extent, and the effect they have had on the farming interest.

17. Examples of good management or success in farming.

18. General profits of farming; showing the returns for capital invested.

19. Education; the state of schools, and whether any instruction having a particular reference to agriculture, is given in schools and academies, and with what success or advantage.

20. Suggestions for improving the condition of agriculture.

21. Zoology of the county—at least a notice of those indigenous quadrupeds, birds, reptiles, fish, &c., that are serviceable or detrimental to man.

Horticultural Premiums.

THE Pennsylvania Horticultural Society, offers the following premiums at its stated meeting on the 20th inst., at eight o'clock, P. M.

GRAPES.—For the best, three bunches, of a black variety to be exhibited, \$3.

For the second best, do. do. do. \$2.

For the best do. of a white variety, do. \$3.

For the second best do. do. do. \$2.

APRICOTS.—For the best, two dozen named to be exhibited, \$2.

For the second best do. do. do. \$1.

PLUMS.—For the best, one dozen to be exhibited, \$2.

For the second best do. do. do. \$1.

FRUITS.—For the best, one dozen to be exhibited, \$2.

PEARS.—For the best, one dozen named to be exhibited, \$2.

For the second best do. do. do. \$1.

APPLES.—For the best, half a peck named to be exhibited, \$2.

For the second best do. do. do. \$1.

And at the meeting on the 18th proximo, the following premiums are offered:

GRAPES.—For the best, three bunches, of a black variety to be exhibited, \$3.

For the second best do. do. do. \$2.

For the best do. of a white variety, to be exhibited, \$3.

For the second best do. do. do. \$2.

NECTARINES.—For the best, one dozen named to be exhibited, \$2.

For the second best do. do. do. \$1.

PLUMS.—For the best, do. do. \$2.

For the second best, do. do. do. \$1.

PEACHES.—For the best, two dozen to be exhibited, \$3.

For the second best do. do. do. \$2.

For the third best do. do. do. \$1.

PEARS.—For the best, one dozen to be exhibited, \$2.

For the second best do. do. do. \$1.

APPLES.—For the best, half a peck to be exhibited, \$2.

For the second best do. do. do. \$1.

For the Farmers' Cabinet.

Timothy Grass.

Phleum Pratense.

THIS valuable grass, is, I believe, generally considered as a naturalized foreigner. An accidental examination of an agricultural work printed in London in 1764, entitled "*Museum Rusticum et Commerciale*," seems to throw some doubt on this point, and to make it common to both England and America. It is there spoken of as delighting in wet or moist soils, and having a root like couch grass; and for this reason forming a strong covering for bogs, and other wet places. It is also spoken of as by no means a good pasture. Nothing is said of its qualities for making hay, and its cultivation is not recommended on account of the difficulty of eradicating it when once in possession of the soil. A Mr. Roeque, who seems to have been an experimenter in grasses, in a communication to the same work, uses this language: "As to Timothy grass, it grows prodigiously quick. Lord Robert Manners brought me a root from Lincolnshire, that grew on a quarry, the stem of the grass was about two feet and a half high, the seed was ripe and larger than that brought from Virginia." From this it might be inferred, that

at that time, December, 1763, Timothy grass was known rather as an American, than an English, vegetable. Stillingfleet, in his observations on grasses, speaks of it as being brought from North America about forty years before he wrote, which was in 1811. It was introduced into English agriculture with strong recommendations, but, as he says, was soon rejected, being found coarse, and of little value for any purpose. Curtis, in his "Practical Observations," gives it precisely the same character, but makes no allusion as to its "*habitat*," or whether it be English or American. Sinclair, in his "*Hortus Gramineus Woburnensis*," expresses other opinions. He thinks it of great value as a "constituent of any mixture of grasses for permanent pasture," and also for hay. From him we have a corroboration of the "*Museum Rusticum*," that it was first made known to English agriculturists in 1763, by a gentleman who took it from this country. Parnell, in his late work on grasses, confirms this idea. Our own Botanists, with the exception of Eaton, appear to think it an emigrant foreigner, somewhat starved and ill treated at home; but under the broader and more flattering encouragements of our free institutions, richer lands, and stimulating climate, transformed into a more important and imposing production. The authorities quoted above, lead to the belief that it is a "native," and that its value in agriculture was first made known from this country, and the reputation it has gained and continues to have, first established here.

A. L. ELWYN.

Philadelphia, June 21st, 1847.

JOHNSON, in his Encyclopedia, says "this is a great American grass, and is called Timothy, from Mr. Timothy Hanson, who first introduced its seeds into Maryland;" and we all know that for hay, it is one of our most valuable grasses.—Ed.

From the Cultivator.

Disease among Neat Cattle.

On a fine morning in June, 1838, a neighbour of mine requested me to examine the bodies of two fat steers which he had just found dead in his pasture field, and which he suspected had been poisoned. He said that having driven one from the field late the previous afternoon, he had observed the two that were now lying dead before us, quietly grazing about, apparently in perfect health. As their hides had been removed, my attention was first attracted by the bloodless appearance of the flesh, like that of well dressed butchers' meat. There was no offensive smell, nor any distension of the abdomen. On laying open that cavity, no gas

escaped, and the stomach, or maw, the part first exposed, presented a perfectly healthy appearance. On cutting into this organ, it was found well filled with grass, which had a very fresh and natural appearance, as if the animal had fed in perfect health until within a few minutes of its death. On raising up flaps with the knife, a thin pellicle was seen to detach itself by its own weight and that of the grass adhering to it, leaving the villous coat of the stomach perfectly clean and apparently healthy. The maw being now removed, brought into view the liver, the spleen, and small intestines. Hitherto everything had presented nearly a natural aspect, but this was now no longer the case. The liver, indeed, appeared healthy, with the exception of a somewhat unnatural paleness, but the spleen was much distended with black blood, and the small intestines were found filled, entirely filled with the same fluid! So intensely did this dark coloured blood show through the thin coats of the bowels, that the bystanders mistook it for mortification; but after letting out their contents the membranes assumed their natural colour. It seemed that all the blood in the body had found its way into the bowels, and this view of the matter was strengthened by examining the viscera of the chest. The lungs were very pale and bloodless, and upon slitting open the heart across the septum, so as to lay open both ventricles; the right was found to exhibit some bloody stains, but the left was as clean as if it had been wiped out with a wet cloth. The animal had evidently died of bleeding, and that without the escape of a drop of blood from the body. It had probably fed until dark, wholly unconscious of its impending fate, and then quietly laid itself down to sleep the sleep of death. Nearly all the blood in the body, by some unknown process, had been suddenly transferred from its natural receptacles into the intestinal tube; and so suddenly had this been accomplished, and with so little previous indisposition, that all the animal functions had been performed in apparently the most healthy manner until within a few moments of dissolution. But *how*, or by what channel had the blood been so transferred, was a question for the anatomist. By what unknown, what miraculous process had such a state of things been brought about? How could the animal live until the blood-vessels, and even the heart itself could be entirely emptied? No butcher ever accomplished a feat like this. Slit open the heart of the most thoroughly bled animal from the slaughter house, and it will be found to contain large clots of blood. No human means can sustain life until the heart

squeezes out the last drop of its contents. No poison known to man—no chemical knowledge, however profound, could concoct a poison capable of producing a death like this! To Him alone who created, it is reserved to slay in a manner so wonderful.

It may well be supposed that I felt a deep interest in this strange discovery, and lost no opportunity in its further investigation. Many deaths of the same kind occurred in the town of Rye that season, but I could learn of only one instance in which any indisposition was noticed before death. Most of the animals must have died in the night, as they were found dead in the morning, without having exhibited any evidence of disease the previous day. One alone was seen in the day time for a few minutes staggering about, but it soon settled upon the ground and quietly expired. All the examinations made that season, presented precisely the same appearances.

There was the same bloodless appearance of the flesh, the absence of fetor and gaseous distension of the abdomen; the same fresh and natural condition of the herbage in the stomach, as if the animal had fed until the last hour of life; the intestines presenting the same dark purple appearance, in consequence of the whole tube, through all its doublings and convolutions, being entirely filled with blood; while the heart, in every instance, was found entirely empty.

I heard nothing more of this disease for a space of eight years, until last summer, (1846,) when a gentleman one morning requested me to examine the body of a cow he had just lost, in the hope that I might be able to detect the poison with which, as he supposed, she had been destroyed. He stated that she had been brought from the field in the morning with other cows for the purpose of being milked, and was at that time apparently as well as any of them. When about half milked she stepped away and laid down under a tree; the milker coming into the house, related the fact, and complained that she could not get her up again. On going out himself he found her dying, and she actually expired within half an hour from the time of laying down. This statement at once induced suspicion that the malady of 1838 had returned again, and I described to him minutely the appearances then met with, and ventured to predict that his cow would be found in the same condition; in which case, I remarked, the idea of poison by any human agency, cannot for a moment be entertained. It is only necessary here to add, that the examination confirmed the prediction in the most minute particulars.

Hitherto this disease had been confined

entirely to neat cattle, and as far as I knew, had appeared only in the summer months. In February last, however, a friend called to request the chemical examination of the stomach of a young heifer that had just died, saying that he had previously lost several cattle in the same way, and that his neighbours, all suspecting poison, had urged him to have the matter thoroughly investigated. In answer to a question of mine, he stated that he had lost ten in all, seven of them in the warm months of summer, and three the present winter; and that he had never found one of them sick; the first intimation of his loss being that of finding them dead in the field, with but one exception, and in that the animal was breathing its last when discovered. On cutting open the specimen he had brought with him, it disclosed the peculiar appearances described as belonging to this disease, and I stated to him the discoveries previously made, and that on his return home, a further examination would probably show him the heart destitute of blood, and the intestines filled with it; and that he might rest assured that no human agency could have had any share in the matter. This last suggestion seemed to be very acceptable to him, for the suspicion of having an enemy about him base enough to destroy his property in this manner, was exceedingly annoying. And here it will be proper to point the reader's attention to the fact, that every application for post-mortem examinations hitherto mentioned, had been based upon the suspicion of poison; a suspicion far more harassing and vexatious to generous and worthy minds than the loss of property itself; and it was a hope of being able to dissipate this delusion, so fraught with mischief to society, and so liable to disturb the harmony and good feeling of every neighbourhood where it might be entertained, that first suggested the idea of writing this history. But the singular and novel features of the disease itself, and the deep interest the farmer has in its further investigation, may perhaps give it a still higher claim to a place among the agricultural notices of the day.

It was the intention of the writer to compare the peculiar features of this disease with the symptoms detailed in the history of past epidemics among domestic animals, and likewise to offer a theory in explanation of the strange physiological fact alluded to in describing its post-mortem appearances; but the length to which this article has already arrived, must defer this intention to a future period.

THOMAS CLOSE, M. D.

Portchester, Westchester Co., March, 1847.

From the American Agriculturist.

Comparative Weight of Pork and Bacon.

On the 16th of December, 1846, I bought twelve hogs, weighing 272, 245, 240, 237, 230, 229, 223, 212, 212, 206, 196, 189, mak-

ing a total of 2,696 lbs. at \$1 87½ per 100 lbs. making \$50 50.

According to the market price in Chicago this was the fair value, merely deducting price of hauling. These cut up next day made

94 handsomely trim'd hams,	weighing 639 lbs., to cost say 9½ cts.,	\$14 23
94 do. shoulders,	do. 380 do. do. 9 do. 11 00	
94 do. sides clear of bone,	do. 668 do. do. 9½ do. 16 65	
Leaf, lard, and trimmings of belly, &c.,	do. 330 do. do. 3 do. 9 90	

Trimming of lean meat, clear of bone, for sausage, 51, it will make \$38 37

Or \$1 87 more than the whole hogs cost, or 2,961 lbs., including the sausage meat at ¾ cents a pound, it will exceed the cost 37 cts.

Then I had the remainder as follows:

12 joles	106
Back bones and ribs	158
Pates and souce	195
Loss in cutting up	43
	363

I take no account now of anything but the hams, shoulders, and sides. For cutting and curing I have charged my own time,

1 day cutting up and salting (including board)	\$1 25
1 day hired man assisting	63
2 lbs. saltpetre, 37; 96 lbs. N. Y. salt (1½ bushels)	
96 cts.	1 33
Dec. 30, work overhauling and resalting, 25 cts.;	
32 lbs. salt, 32 cts.	57
Jan. 16, 1847, preparing and hanging up meat to smoke	1 25
April 2, labour of weighing bacon	23
	\$5 37

After smoking and drying from January 16th, to April 2nd, it weighed as follows:

94 hams.....571.....loss 61.....632 original weight.	
94 shoulders.....534.....do. 46.....580 do.	
94 sides.....636.....do. 28.....668 do.	
1741 139 1880	

This, at three cents a pound, will exceed the cost of the hogs, \$1 73.

Any person can, however, fix his own price upon each part, and by taking comparative weights make his own calculation and estimate of profit and loss. The weights were all carefully taken by my own hands, with the same steelyards. The hogs were well fattened upon corn. The price of pork last fall was low. The fair price of the bacon now, I think, is seven cents on an average.

But as "one swallow don't make a summer," I will give another table, so that a comparison can be made with these and the former one. January 18th, 1847, I killed seven hogs, weighing 831, 235, 233, 222, 173, 167, 150,—the three last pigs,—and at same time received from a tenant the half of two others, that were poorly fattened, which weighed 237 and 186, making my half 212,

and the total 1723 lbs., which at the same price as the other lot, \$1 87½ per cwt., would make \$32 30. These cut up the next day were as follows:

16 hams	413
16 shoulders	334
16 sides	406
Leaf, lard and trimmings	303
Sausage meat and tail pieces	63
	1473
Joles	78
Back bones and ribs	89
Pates and souce	89
Loss in cutting	13
	1733

The per centage of loss in cutting up this lot is less than the other. This is partly owing to being better dressed.

Weight smoked.....370.....loss, 43.....413	
do. do. 314.....do. 30.....334	
do. do. 368.....do. 38.....406	
1632 95 1147	

This at three cents, falls a little short of the price fixed as cost, while the other lot at the same rate exceeded it. This is owing to the small hogs in this lot. The charges against this lot are for

75 lbs. of salt	75
½ do. saltpetre	14
Cutting up and salting, ...	1 00
Overhauling and weighing	36
	\$3 25

No matter what the price of fresh pork is, if the farmer is sure that he could sell the bacon for double that price, he will find it profitable to salt, instead of selling in the hog. For the lard, sausage meat, joles, ribs, &c., will more than pay the cost and trouble of curing, and then he will save about 40 per cent., in the weight of hauling to market.

I should like to see similar calculations upon putting up pork in barrels.

SOLON ROBINSON.

Crown Point, Lake co., Ia., April 29th, 1847.

Potatoes, Beets, Carrots, Parsnips.

Or these several crops I see nothing peculiar in the cultivation in Great Britain, which would require me to treat them at any great length.

The potatoes brought upon the table are, in general, of a much better quality, drier, and more mealy, than those grown in the United States. The potatoes grown on new land, however, in the Northern States, are excellent; and the potatoes brought to market from the northern parts of Maine, and from Nova Scotia, are not excelled by any which I have met with. Within my own observation and experience, likewise, I have found that the finest seed potatoes from this country, planted in the United States, with the exceptions above referred to, have, after the first year, deteriorated, and become conformed to those usually planted in the country. It is demonstrated, therefore, to my mind, that new lands yield potatoes of a better quality than lands which have been long under cultivation; and that a low temperature and damp climate, such as are found in the northern parts of Maine and the British Atlantic provinces of North America, are favourable to potatoes, while in hot and dry climates the quality of the vegetable is inferior.

Potatoes are almost invariably planted here in drills or furrows and thirty inches apart. The furrow is first opened; the manure laid in it; the potatoes planted; and the land reversed by the plough, so as to cover the seed. They are then, just after appearing above ground, often harrowed; and after getting to some height, the harrow, or cultivator, is passed between the rows; and they are earthed up with a double mould-board plough, or by a single plough passing twice in the furrow. When ready to be dug, or, as it is here termed, *lifted*, a double mould-board plough is passed down once, or a single plough twice, through the row of potatoes; those are picked up which are thrown out; and then the whole field is thoroughly harrowed, which brings the remaining potatoes to the surface to be gathered.

Two or three points seem to be well established here; first, that in planting, it is better to use whole than cut sets; that, when they are cut, the seed end of the potato is more productive than the opposite end, and while the former is used for planting, the latter may be saved for food; and lastly, that the crop is considerably increased by early plucking off the blossoms. I have already described the lazy-bed mode of cultivation, and the large crops sometimes obtained, in my account of the Agricultural

School at Glasnevin. In general, however, the crops are not large, not much exceeding two hundred and fifty bushels to the acre, which, though a respectable, is certainly not a great yield. Potatoes are raised largely for the market in some places; but in passing through the country, the extent of land under cultivation in potatoes appears comparatively small.

I cannot join with Cobbett in his anathemas upon potatoes, to which a learned agricultural professor here has lately added the force of his denunciations, which are likely to fall harmless under the power of habit and general taste. There certainly can be found, as common consent seems to have established, no more agreeable, and no more nutritious esculent than a well cooked potato; and under few crops will an acre of ground yield more food for animals. The disease which has prevailed in the potato—the ravages of which have been so extensive and alarming—will, it is hoped, prove only a temporary evil, or some effectual remedy against it be found. In Ireland, a large number of the population, amounting to millions, depend, almost exclusively, upon the potato for subsistence. The ordinary allowance to a working Irishman is, from fourteen to sixteen pounds of potatoes per day. It cannot be denied, however, in a moral view, that potatoes to the Irish are an equivocal good. In order to improvement, man requires a constant and severe stimulus to exertion. The necessities of men are the excitements to industry and enterprise, and very often the foundation of their virtues. But what hope can be entertained for the improvement of persons content to live upon the meanest fare, and in circumstances of destitution barely compatible with existence, and to go on and marry, and rear children, with no expectation or ambition beyond that of a mud cabin, a peat fire, and a potatoe diet?

Next to potatoes and turnips, beets occupy a principal place in English cultivation. Of beets, the field cultivation is limited to the mangel-wurzel. These are cultivated in rows, upon ridges, similar to the cultivation of turnips, about thirty inches apart; and though the seed is commonly dibbled in at six inches distance in the rows, the plants are thinned out to a distance of one foot. Deep cultivation is always strongly recommended for all tap-rooted plants. An eminent farmer in Northamptonshire, after having furrowed and manured the furrows for his mangel-wurzel, as the wheels of the cart and the trampling of the horses tend to harden the bottom of the furrow, before the land is turned back upon it in order to form

a ridge, passes down in the furrow with a miner, that he may loosen and deepen it. A miner is simply the colter of a plough, without the mould-board. He speaks of this as being attended with great advantage. No machine has yet been invented which may be safely trusted to drop the seed. A wheel with pegs of about two inches in length, and six inches apart, upon the outside of the wheel, which shall make holes in the ground as the wheel revolves, handles like those of a wheel-barrow being attached to it, is used to dibble the land, into which children, who follow, drop the seed, one being sufficient in each hole, as every capsule in fact contains four seeds. The seeds are then covered with the head of a rake or with the hand. The land between the rows should be kept loose by ploughing, and thrown upon the rows, but not upon the plants, whose nature it is to grow much out of ground. In the latter part of the season, the under leaves may be gathered and fed to milch cows, or sheep, or swine, with great advantage to the consumer, and where the crown is left unbroken and only the lower leaves taken, without injury to the producer.

Reports have been furnished me of crops of fifty-eight tons per acre, and in other cases, of forty-eight tons, and fifty-six tons, per acre; this, of course, after they were topped and cleaned. These, however, are very extraordinary crops, the common yield being about thirty tons. They are much valued for milch cows, and for fattening cattle. Experiments have been made to test the value of mangel-wurzel compared with Swede turnips in the fattening of cattle. The experiments which have come under my knowledge—the estimate of the increase of weight of the animals experimented upon having been made from external measurement, and not in scales—do not appear to me decisive, but only indicative of considerable superiority in fattening properties of the mangel-wurzel over the Swedes. The yield of mangel-wurzel, per acre, under good cultivation, is considerably greater. Caution is to be used in giving them to milch cows, as they are apt to produce scouring. From this effect I have suffered in the free use of them with my own cows. It is strongly advised, likewise, not to use them until the spring or late in the winter; and I have known farmers to keep them sound and fresh into August. They are considered as not unfavourable to wheat, which may be sowed after them. The seed of the beet should be well soaked before sowing; and it is advised, in the event of transplanting them to fill up vacancies, not to place the plant lower in the ground than it formerly stood, as other-

wise, if planted to the top, it will send out shoots from the top, and become scraggy or forked.

Carrots are cultivated to some extent, and much valued. There is nothing, however, peculiar in the cultivation. The land should be deeply ploughed and highly manured. They are usually cultivated on a flat surface; but I am satisfied that the ridge cultivation at a distance of two feet, so as to plough between them, would be far preferable. The seed should be sprouted before sowing and mixed with sand, in order to avoid its being sown too thickly. If sowed on ridges, they will be much more easily cultivated and kept clean; and they should be thinned out to the distance of six inches apart. The Belgian white carrot has come greatly into favour in England. A distinguished farmer, in whose authority I place the utmost confidence, pronounces it as thirty per cent. more productive than the common carrots; and I met with an eminent farmer who had grown thirty-one tons seventeen hundred weight upon an acre, and whose crops averaged twenty-four tons per acre. Another farmer informed me, that he usually obtained twenty-five tons per acre. A farmer, at Birkenhead, near Liverpool, who is laying the foundation of one of the most splendid agricultural establishments in England, and whom I had the pleasure of visiting, obtained a crop of a hundred tons from three acres. Much of this was due to the liberal application of guano. Another farmer reports having grown upon four acres four thousand eight hundred bushels of the white carrot, or twelve hundred bushels per acre, which he fed to his horses, ten pounds each per day, and to his neat cattle, with very great advantage. A strong prejudice exists against the use of white carrots for horses, as injuring their eyes; and the farmer first mentioned above thinks it not without foundation, believing that his own horses had suffered from that cause.

With respect to the common red beet, or the sugar beet, and the parsnip, I have not seen them under field cultivation in England, though the parsnip is said to be largely cultivated, as feed for stock, in the channel islands. The sugar beet is reported to yield abundantly, and to furnish a more nutritious food, better for fattening, and for milch cows, than the mangel-wurzel; yet the former has not supplanted the latter. The Jerusalem artichoke is often served at table, and is approved by many as food for stock, but is not so palatable or so nutritious as the potatoe. It grows, however, without much care, and in almost any ground, besides continuing itself in the ground from year to year. Un-

der favourable circumstances, it is said to yield five hundred bushels to an acre,—a statement which I do not give from personal observation, nor receive without some distrust.—*Colman's Tour.*

For the Farmers' Cabinet.

Cause and Preventives of the Fly in Wheat.

MR. EDRON.—In the fall and spring of the year, when the young wheat is very succulent, if the soil contains very little alkali, the young plant is very apt to absorb much free carbonic acid. This carbonic acid, in its free state, when too abundant to be assimilated by the plant, unites chemically with the soft vegetable tissue, and forms a sweet substance, very pleasant to the taste of insects, and attracts them to the plant. They attack the wheat, and are charged with being the cause of the sickly and deformed state of the plant,—while the surplus carbonic acid was the first cause, and they only a secondary one. If, then, we would prevent the fly from attacking the wheat, we must apply to it such substances, as, while they render the juices unpleasant to the taste of the insect, also strengthen the plant. These two objects may be gained by applying alkalies—such as soda, potash, lime, &c.,—in the form of salt, ashes, lime, &c., to the plant at the time they are liable to be attacked. If we apply these substances early enough we may prevent the carbonic acid from doing injury; but we may apply these after the injury has been done, and the plant will absorb them and they will render its juices nauseous to the insects, and thus prevent their attacks. Charcoal is very useful to prevent the surplus carbonic acid from injuring the plant.

The salt should be applied at the rate of one bushel or less to the acre. The ashes and lime—fresh slacked—at the rate of five bushels or more to the acre. Each farmer's experience, however, with good judgment, are the best guides in these matters, as the circumstances differ so widely in different locations, soils, modes of culture, &c.

CHEMICO.

June 22nd, 1847.

Strawberries in Cincinnati.

THE *Queen City* promises to become as famous for strawberries, as Newcastle is for coal. And five to ten cents a quart too! We have not seen a lot of passable ones in our market the present season, far less than twenty cents. Are there any means of ascertaining the amount sold in Philadelphia? Why do not our farmers and gardeners make them as cheap here as they are at Cincinnati? Surely it would be as

profitable as growing potatoes at even a dollar a bushel.—*Ed.*

A CINCINNATI paper states, that one day last week, no less than 502 bushels of strawberries were offered for sale in the markets of that city. Add the quantities left at the hotels and steamboats, and the aggregate would amount to 550 bushels. The price ranged from five to ten cents per quart. The Cincinnati Horticultural Society have agreed that "a premium of one hundred dollars be awarded during any strawberry season hereafter, for the production of a new seedling strawberry, superior in size to any now cultivated in the vicinity."

The following, says the Cincinnati Herald, shows the amount of strawberries sold in our markets since the present season has opened, copied from the daily record kept by a committee of the Society:

May 25th, 15 bushels; 26th, 20 bushels; 27th, 20 bushels; 28th, 40 bushels; 29th, 50 bushels; 31st, 50 bushels. June 1st, 296 bushels; 2nd, 250 bushels; 3rd, 50 bushels; 4th, 247 bushels; 5th, 489 bushels; 7th, 200 bushels; 8th, 514 bushels; 9th, 411 bushels; 10th, 237 bushels.

The actual amount brought in and delivered at other places than the markets, will increase the above, probably 20 per cent. At the end of the season, the committee will make a Report on the whole number brought into the city, including what has been sold to the Confectioners, Hotels, &c., as far as the latter fact can be ascertained. Of course, the above statement is incomplete, though correct, as far as it goes.

Fibrous Covering for Land.

MR. G. GURNEY observed that, "if a bush or other fibrous matter were left lying in a field of grass, the vegetation beneath it would soon be observed to be finer or fresher than that around it. This was a fact known to every one, but the agency by which this increase of growth was brought about, evidently involving some great and important but unknown principle, had never been investigated. Flags, rushes, straw, bushes, or, in short, any fibrous covering, would produce a similar effect. Reeds, or wheaten straw, applied over grass, at the rate of about a load to a load and a half per acre, would, in a short time, increase the quantity of grass to an incredible extent. The various grasses under it would be found to be healthy, and rapidly passing through the stages to maturity, some growing, some flowering, some seeding. Part of a field of grass placed under this operation for one month had increased in weight, over the re-

maining portion left uncovered, at the rate of nearly three to one. The green grass from the part untouched, cut at the end of the month, weighed two thousand two hundred and seven pounds per acre; that of the portion placed under the operation weighed five thousand eight hundred and seventy pounds per acre. The grass was weighed as it came from the scythe. During this period, there was not a drop of rain; and guano, nitrate of soda, lime, shell-sand, wood ashes, and other manures, tried against it, possibly from the drought, produced, during this period, no very visible action. In this experiment, the fibrous covering was laid on the 15th of April, and the grass cut and weighed the 30th of May. Half of a hay field was covered on the 2nd of May; and a month after, I had cut and weighed, respectively, the portions of the field covered and uncovered, and found that the one weighed three thousand four hundred and sixty pounds per acre, whilst the other weighed only nine hundred and seventy pounds. As to the length of the grasses in the respective pieces, the trefoil in one case measured three and one-half inches, whilst in the other it only measured an inch; clover six inches, in the other one and one-half." He found, on making the two samples of grass into hay, that the proportionate loss of weight was the same in each parcel, and the difference would be, that in the one case he should get three tons to an acre, and in the other only one. Another most important circumstance in the case was, that when "a certain quantity of stall dung would double the quantity of grass in a given time, when laid on in the usual way, that it would increase it six times, when properly treated with fibrous covering."

These are certainly very curious experiments, and they have been repeated successfully by various individuals. "For an individual to satisfy himself, a bundle of straw, say forty pounds, strewed lightly over two or three rods of growing grass, would in a very short time show the effect, when raked off. In the experiments made, all gave uniform results, when conducted fairly. Some used too much covering, but *generally too little*. All these experiments showed that the action was general; that the difference in increase of growth, in a given time, was in proportion to the natural fertility of the soil."

"The practical instructions for the use of fibrous covering are few, but essential to profitable results. Straw of wheat, oats, or rushes, is to be lightly and evenly laid over growing grass, in the proportion of about a ton to a ton and a half per acre. At the

end of a fortnight, it must be raked up in heaps like hay-cocks, the grass eaten off by cattle, and the covering again relaid. This is necessary in the growing season, otherwise the herbage will grow through, by which the action will cease; the grass will also become entangled with the covering. If the land is good, the grass may generally be eaten off by cattle before the covering is relaid; if not, at the end of the next fortnight—more or less depending on the richness of the land, the season, and the weather—it should be done, and the covering relaid again; and repeated at about these periods through the season. If straw be the material used, it will last through the whole summer. In the autumn it is the practice to rake it off when dry, carry it away, and stack it for winter litter. Ground under the action of fibrous covering, we find from our returns, will keep three times the quantity of cattle as ground not so treated. This experience seems in keeping with our experiments on weight and measure, of the produce thus obtained."—*Colman's Tour*.

WHITWASH.—In many cases, whitewash is preferable to paint, and is one of the most excellent things in the world to preserve cleanliness and health. The walls of cellars ought to have a coat, and a liberal one, of whitewash applied every spring; so should the interior of all your out buildings, hog house, wood shed, stable and all. Fences, when not painted, should also be accommodated with a coat of it. By carefully whitewashing the walls of your cellar, and applying a good coat overhead, with a liberal sprinkling of caustic lime over the bottom as soon as your vegetables are removed in the spring, you secure exemption from many evils, not the least of which is the preservation of a pure atmosphere during summer, and its invariable attendant, **HEALTH**. The cost of whitewashing is but little, as the operation can be performed in dull weather, when the help employed on the farm or about the buildings, will be likely to be unemployed in other duties, while the materials and implements, from their extreme cheapness, are scarcely worthy of being taken into the account.—*Maine Farmer*.

So great is the influence of even simple food on the nerves after protracted abstinence, that intoxication has occurred from the stimulus of oysters alone; and Dr. Beddoes states that persons who have been shut up in a coal work from the falling in of the sides of a pit, and have had nothing to eat for four or five days, will be as much intoxicated by a basin of broth, as an ordinary person by three or four quarts of strong beer.

Digestion.

HUNGER and thirst are the preliminary steps to digestion; they constitute a law implanted in the animal economy, for the purpose of inducing the living being to take such nourishment as is required to sustain that waste of the system which animated nature is continually undergoing. If the dictates of the sensation of hunger and thirst are rationally obeyed, satisfaction and healthy digestion are the result; but if, on the contrary, these important sensations are neglected, weakness and disease must necessarily ensue. Appetite, or, in its more advanced stage, hunger, teaches animals to seek for solid food, and thirst suggests the propriety of rendering the solid mass more pulpy and dilute by the employment of drink. Experience and reason, both in man and brutes, must in some measure direct the selection of the proper objects to be employed for these purposes. I was some years ago consulted by a worthy individual with regard to the propriety of fasting as a religious observance. I told him that the sensation of hunger and thirst constituted a most important law in the animal economy, destined by the Creator for the most beneficent purposes; that it ought to be obeyed as a matter of duty, and that if infringed, some prejudicial result would necessarily ensue; because it is no argument in favour of any such experiment upon human life that existence does not terminate upon its adoption, or that the symptoms of some frightful disease are not instantly ushered in. The seeds of future mischief may be sown by one experiment, and may only lie dormant until a second or succeeding infringement shall cause them to spring forth into living activity. In the course of extensive series of experiments upon cows, it was found that, when they were not supplied with sufficient food during one day, the product of milk was a day or two in reaching its former average; thus demonstrating that the animal had been weakened by the abstinence, inasmuch as it took a longer period to reach its ordinary condition than was required to reduce it. The milk, in such an experiment, corresponds with the muscle and fatty portions of the body of animals which do not supply milk; hence abstinence in all animals must be followed by a diminution of the weight of the body. It has been well remarked by Liebig, that "in the process of starvation it is not only the fat which disappears, but also by degrees all such of the solids as are capable of being dissolved. In the wasted bodies of those who have suffered starvation, the muscles are shrunk and unnaturally soft,

and have lost their contractility: all these parts of the body which were capable of entering into the state of motion have served to protect the remainder of the frame from the destructive influence of the atmosphere." There is no difference in this respect between one set of animals and another. Civilized and savage men, wild and domestic animals, must all be classed under the same category.

In the human species a morsel of food is grasped by the front teeth of both jaws, which are each supplied with sixteen teeth, making thirty-two in all. In those animals which chew the cud, as they have only one row of teeth the food is less firmly grasped by the jaws, and there is, therefore, a greater necessity that it should be of a soft and pliable nature. By the assistance of the lips, jaws, tongue, and auxiliary muscles, the food is conveyed into the cavity of the mouth, and by the aid of the tongue and lateral motion of the mouth it is placed between the opposing jaws, where it is masticated or ground to a proper consistence. But the action of the jaws in grinding the morsel introduced between them at the same time elicits the compressing power of the muscles of the cheek upon the parotid gland, which is situated in man in front of the ear, and expels its secreted fluid, the saliva, into the mouth, to assist in comminuting the nutritive matter. Besides this mechanical action, there is, however, a nervous sympathy called into operation. The masticated matter acts upon the tongue and adjacent parts, inducing a sympathy with the glands placed under the tongue, and causes them to pour out their copious contents. The object of mastication or chewing is, therefore, to reduce the food to such a consistence as shall fit it for its reception and proper digestion in the stomach. This is well illustrated in the instance of animals which are not supplied with teeth.

The common fowl, for example, is destitute of these grinding apparatus; but it has a muscular mechanism, termed the gizzard, which powerfully compresses the introduced food, and by means of pebbles and stones, which are a necessary article of food with the class of animals referred to, an artificial substitute for the teeth is provided. In graminivorous animals, we shall find that a substitute for the second row of teeth is provided in the operation of rumination, or chewing the cud. From attention to these facts, therefore, we are taught that the preparatory step of digestion consists in the fine division of solid food by means of the apparatus set apart in the mouth for this purpose, and its mixture with a certain

amount of fluid saliva to render it more dilute.

The importance of the proper grinding of the food, and of rendering it as soluble as possible, can be well appreciated by such individuals as have been the subjects of indigestion, from the eructation of morsels of food, of gases, and of acid liquors. It is scarcely necessary to remark, that similar rules are applicable to the inferior animals, and more particularly in the state of confinement to which most of them are more or less subjected, when they are made to minister to the wants of the human species. —*Thomson's Researches on the Food of Animals.*

Mt. Airy Agricultural College.

To the Editor of the Farmers' Cabinet:

DEAR SIR,—As my circular in reference to an Agricultural College appeared first in the Cabinet, I deem it but proper that the response, or success it met with from the public, should also be first communicated through the same channel.

It will be recollected, that my zeal for the promotion of agriculture, led me to propose, in February last, the founding of an Agricultural College, on a liberal scale, at Mt. Airy, provided the public would encourage the effort so far, as to furnish for certain, eighty students, by the 1st of July, to begin with.

The patronage required was very moderate, in view of the expense to be incurred in carrying on an Institution such as I had contemplated—yet I was willing to risk the outlay in material, Professors' salaries, &c., to be met by an increase in students, or from my own private purse. I am, however, relieved from further speculation on this head, as the students offering to enter, up to the time limited, fall far short of the number required by the terms of my circular—and I am therefore constrained to announce to the public, that the College cannot go into operation. Thus my darling scheme of promoting the interests of agriculture and horticulture, is for the present suspended, if not altogether abandoned.

To you, and the gentlemen conducting the Agricultural press, and Editors in general, who entered into my views with such disinterested zeal, and manifested such personal kindness to myself, I return my grateful acknowledgments; and should they copy this, or inform their readers that my humble attempt has thus far proved abortive, they would add to the obligation their courtesies have already imposed upon me.

To the gentlemen who forwarded the names of their sons, to be enrolled as students, and others, whose spirited and patriotic sympathies were enlisted in the cause, I cannot but express my most unfeigned friendship and profound respect—tendering to them in the same spirit their offering was made, my best assistance, should any of them essay, as I have done, to promote and elevate the character of the agriculture of the country.

Respectfully yours,

JAMES GOWEN.

Mt. Airy, Philadelphia, July 5th, 1847.

The Daisy.

BY JOHN MASON GOOD.

Not worlds on worlds, in phalanx deep,

Need we to tell a God is here:

The daisy, fresh from winter's sleep,

Tells of his hand in lines as clear.

What power, but His who arched the skies,

And poured the day-spring's purple flood,

Wondrous alike in all it tries,

Could rear the daisy's curious bud;

Mould its green cup, its wiry stem,

Its fringed border nicely spin,

And cut the gold embossed gem,

That set in silver, gleams within;

And sing it with a hand so free,

O'er hill, and dale, and desert sod,

That man, where'er he walks, may see,

In every step, the stamp of God!

PRODUCTIVE ORCHARD.—A correspondent of the *Prairie Farmer*, says that an orchard of 300 apple trees, owned by Elijah Capps, of Fulton Co., Illinois, nineteen or twenty years old from the seed, produces now from twenty to forty bushels per tree. Much of this success may doubtless be ascribed to the new and fertile soil of that country; but it might be nearly approximated further east, by deep, rich, highly manured soil, and constant and mellow cultivation.

PLOUGH MAKING.—It is curious to trace the progress of plough making in England. Those of the early cultivators, were of necessity rude and imperfect, for in those days the ploughman made his own plough. A law of the early Britons in fact, directed that no one should guide a plough until he was able to make one. The driver was by the same law, to make the traces by which it was drawn, and these were to be formed of withes of twisted willow. The early Saxons used wheels to their ploughs.

For the Farmers' Cabinet.

Put the Tools in their proper places.

THERE are probably very few, if any, men who have had the charge of farms, with men and boys under their direction, who have not frequently experienced vexatious interruptions in their business for want of a tool, which at the moment it was needed, could not be found. It had probably been used by some one of the family, left where it was used, and forgotten. Those farmers who require their domestics to deposit the tools which they use, in some definite place, whenever they have done with them, and exact invariable attention to this rule, may be deemed punctilious and rigid, but they often save themselves and others no trifling share of perplexity. A simple instance will illustrate the case—at one time, when I had a large family about me, some vegetables, perhaps turnips, which were buried in the garden, and then covered with a hard frozen crust, were wanted for dinner: to break this crust a grubbing-hoe was required. It was known there was one about the premises; but nobody could tell where it was. After an extended search, the attempt to find the grubbing-hoe was abandoned as hopeless, and other means of supplying the dinner were adopted. Some time, probably several weeks afterwards, in walking over one of the fields, the hoe was found lying on the ground, and it was discovered, that a hired man who had been directed to spread some lime there, had taken it with him to reduce the lime into smaller fragments; and when he was done with it, thrown it down, and forgotten it.

An old man once told me, that when he was a boy, he was engaged on one occasion, in company with a hired man in chopping wood; and in the evening, they concluded that as they expected to be similarly employed on the next day, they might save themselves the trouble of carrying their axes home with them. They therefore hid them in the woods and walked home. His grandfather, with whom he lived, saw them returning, but made no observation till they were just about retiring to bed; he then inquired whether they had brought the axes home; and upon receiving an answer in the negative, told them they must go and bring them. They asked if they were not to return to their former employment in the morning! but he told them they did not know that they would live till morning, and if they should die during the night, nobody would know where to look for the axes. His orders were therefore peremptory, and they were obliged to repair in the night to the

woods and bring the axes home. This taught the boy a lesson which he did not quickly forget; and very probably saved him more trouble in after life, than this nocturnal journey to the woods.

It is said, that Dean Swift was very particular to have the doors shut by those who entered or left the room. A favourite maid on one occasion, asking permission to attend a marriage at a distance, he not only granted her request, but offered to send a man to wait on her. Pleased with this kindness, she hastily withdrew and forgot to close the door after her. When she and her waiter had been some time gone, a servant was despatched in haste to demand their return. When he overtook them they were several miles on the way, but the order being peremptory, they reluctantly returned home: when the maid presented herself before the Dean and inquired his pleasure, he told her, he wished her to shut the door after her. This piece of instruction we may readily conceive, required no repetition. L.

Remedy for the Yellows.

It may seem to many persons a difficult task to rid ourselves of so wide spread a malady as this, yet we are confident that a little perseverance and care will certainly accomplish it. In the present uncertainty with regard to its contagious nature, it is much the wisest course to reject "the benefit of the doubt," and act upon the principle that it is so. We know at the present moment several gardens, where the trees are maintained in good health by immediately rooting out and destroying every tree as soon as it shows marked symptoms of the malady.

1. We would therefore commence by exterminating, root and branch, every tree which has the yellows. And another tree should not be planted in the same spot without a lapse of several years, or a thorough removal of the soil.

2. The utmost care should be taken to select seeds for planting from perfectly healthy trees. Nurserymen to secure this should gather them from the latest ripening varieties, or procure them from districts of the country where the disease is not known.

3. So far we have aimed only at procuring a healthy stock of trees. The most important matter remains to be stated—*how to preserve them in a healthy state.*

The answer to this is emphatically as follows: *pursue steadily, from the first bearing year, the shortening-in system of pruning.* This will at once secure your trees against the possibility of over-bearing, and

its consequences, and maintains them in vigor and productiveness for a long time.* It will, in short, effectually prevent the yellows where it does not already exist in the tree. To whoever will follow these precautions, pursue this mode of cultivation, and adopt at the same time the remedy for the borer, already suggested, we will confidently insure healthy, vigorous, long-lived trees, and the finest fruit. Will any reasonable man say that so fine a fruit as the peach does not fully merit them?

Whether the system of shortening-in, and careful culture, will prevent the breaking out of the yellows when constitutionally latent in the tree we will not yet undertake to say. A few more experiments will prove this. In slight cases of the disease we believe that it may. Of one thing, however, we are certain; it has hitherto failed entirely to reclaim trees in which the malady had once broken out. Neither do we know of any well attested case of its cure, after this stage, by any means whatever.† Such cases have indeed been reported to us, and published in the journals, but, where investigated, they have proved to have been trees suffering by the effects of the borer only.

A planter of peach trees must, even with care, expect to see a few cases of yellows occasionally appear. The malady is too widely extended to be immediately vanquished. Occasionally, trees having the constitutional taint will show themselves where least suspected, but when the peach is once properly cultivated, these will every day become more rare until the original health and longevity of this fruit tree is again established.

The *Curl* is the name commonly given to a malady which often attacks the leaves of the peach tree. It usually appears in the months of May or June. The leaves curl up, become thickened and swollen, with hollows on the under, and reddish swellings on the upper side, and finally, after two or three

* The following remarks, directly in point, are from Loudon's last work. "The effect of shortening the shoots of the peach is not merely to throw more sap into the fruit, but to add vigor to the tree generally, by increasing the power of the roots relatively to the branches. The peach being a short-lived tree, it has been justly remarked by Mr. Thompson, were it allowed to expend all its accumulated sap every year, it would soon exhaust itself and die of old age." Suburban Horticulturist.

† All the specific applications to the root of such substances as salt, ley, brine, saltpetre, urine, &c., recommended for this disease, are founded on their good effects when applied against the borer. They have not been found of any value for the yellows.

weeks, fall off. They are then succeeded by a new, and healthy crop of foliage. This malady is caused by the punctures of very minute aphides, or plant lice—*Aphis Persicae*?—which attack the under side of the leaves. Although it does not appear materially to injure either the tree or the crop, yet it greatly disfigures it for a time. In orchards, perhaps few persons will trouble themselves to destroy the insect, but in gardens, it is much better to do so. A mixture of whale oil, soap or strong soft soap and water, with some tobacco stems boiled in it, and the whole applied to the branches from below, with a syringe or garden engine, will soon rid the tree of the insects for one or more years. It should be done when the leaves are a third grown, and will seldom need repeating the same season.—*Downing's Fruits and Fruit Trees.*

Fruit and Vegetable Preserver.

HAVING examined Kephart's Patent Fruit and Vegetable Preserver, established by Messrs. Flack, Thompson & Brother, near Fairmount, and noticed its effect on a variety of fruits, vegetables, flowers, and provisions, and having ascertained the temperature and hygrometric state of the air within it—the undersigned has become satisfied of the great utility of this plan of preserving these and similar articles from decay.

By removing the most efficient causes of decomposition, the apparatus secures to every season those delicacies which ordinarily can be obtained in perfection only for a very brief period.

This apparatus commends itself to families and to dealers in fruits and vegetables, as a repository where articles may be safely kept for a long time, in a state of freshness and purity.

WALTER R. JOHNSON.

Philadelphia, June 31st, 1847.

The above notice of Kephart's Patent Fruit and Vegetable Preserver, by Professor Johnson of this city, will carry with it great weight wherever it is read, from the high estimation in which he is held by scientific men, as a chemist of the first order—and from having done so much towards bringing the practical application of chemistry to bear upon the agricultural interests of the country. In addition, we send you an extract from the minutes of the Horticultural Society of this city.

At a stated meeting of the Pennsylvania Horticultural Society, held the 15th ultimo: "The Committee on Fruits reported that they have examined and tasted of the apples which have been preserved by the Vegetable

and Fruit Preserver invented by Mr. Kephart, comprising five varieties, viz: Cider, Bellflower, Favourite, Germantown, and Newtown pippins, and deposited by Flack, Thompson & Brother; and we recommend a premium of three dollars for such fine specimens of fruit so beautifully preserved at so late a period."

Yours, &c., F.

Philadelphia, July 2d.

The Hessian Fly.

Dr. FROX, of Salem, N. Y. closes his very interesting inquiry into the history, character, transformations, and habits of this famed depredator, with the following remarks. His patient investigations seem to have fairly led him to the conclusions here announced, and it is altogether probable that the ravages of this insect will remain, as they have heretofore been, entirely beyond our control, further than may result from a choice of ground and time of sowing. The efficacy, however, of late sowing, we believe to be extremely problematical.—Ed.

THE Hessian fly—*Cecidomyia destructor* of Say, is a European insect, and has been detected in Germany, France, Switzerland and Italy, where it at times commits severe depredations upon the wheat crops. Its ravages are alluded to so far back as the year 1732. It was brought to this country, probably in some straw used in package by the Hessian soldiers, who landed on Staten and the west end of Long Island, August 1776, but did not become so multiplied as severely to injure the crops in that neighbourhood, until 1779. From thence as a central point, it gradually extended over the country in all directions, advancing at the rate of ten to twenty miles a year. Most of the wheat crops were wholly destroyed by it within a year or two of its first arrival at a given place, and its depredations commonly continued for several years, when they would nearly or quite cease; its parasitic insect enemies probably increasing to such an extent as almost to exterminate it. It is frequently reappearing in excessive numbers in one and another district of our country, and in addition to wheat, injures also barley and rye.

There are two generations of this insect annually. The eggs resemble minute reddish grains, and are laid in the creases of the upper surface of the leaf, when the wheat is but a few inches high, mostly in the month of September. These hatch in about a week, and the worm crawls down the sheath of the leaf to its base, just below the surface of the ground, where it remains, subsisting upon the juices of the plant, without wounding it, but causing it to turn yel-

low and die. It is a small white maggot, and attains its growth in about six weeks. It then changes to a flax seed like body, within which the worm becomes a pupa the following spring, and from this the fly is evolved in ten or twelve days. The fly closely resembles a mosquito in its appearance, but is a third smaller, and has no bill for sucking blood; it is black, the joints of its body being slightly marked with reddish. It appears early in May, lays its eggs for another generation and soon perishes. The worms from these eggs nestle at the lower joints of the stalks, weakening them and causing them to bend and fall down from the weight of the head, so that towards harvest, an infested field looks as though cattle had passed through it.

Wheat can scarcely be grown except upon a fertile soil in those districts where this insect is abundant. The sowing should be deferred until about the last of September, the season then being past when the fly usually deposits its eggs. If at any time in autumn the eggs of the insect are observed to be profusely deposited upon the leaves, the crop should be speedily grazed down by sheep and other stock, or if this cannot be done, a heavy roller should be passed over it, that as many of the eggs as possible may be crushed or dislodged thereby. One or the other of the same measures should also be resorted to in the spring, if the same contingency occurs; or if the worms are at a later date discovered to be numerous at the first and second joints of the young stalks, the experiment may be tried of mowing as close down as possible, the most infested portion of the field. Where the soil is of but medium fertility, a resort to some of the hardier varieties of wheat, which are known to be in a measure fly proof, may be advisable.

Value of Land.

You ask why land in Maryland, Virginia and South Carolina has so little value when compared with that of England or of France. To obtain an answer to this question we must first determine what is the cause of value in land. Of itself it certainly has none, as can be seen in the fact that thousands and tens of thousands of acres of the most fertile lands in Texas have been given to individuals on condition of settlement, and that when partially settled they could not be exchanged for half as much as they had cost. Such was the case with those granted to William Penn, and to all others of the early settlers of these United States. The lands of Iowa and Wisconsin have, in part, attained a value of \$1 25 per acre, because of a great expen-

diture of capital in the formation of roads and canals leading from the lakes to market, but they are in many cases dearer, fertile as they are, at that price, than lands in Pennsylvania or New York at \$80 to \$100 per acre. Clear and enclose them, and give them roads and canals, and they will gradually acquire farther value, rising with the growth of wealth and population, *but never equal in amount to that of the labour that has been expended upon them*—a fact universally true, and carrying with it abundant evidence that land owes all its value to the labour applied to its improvements.*

Men who are willing to work seek Illinois, Wisconsin and Iowa, and each takes a piece of land that he is to render valuable by means of his labour, and that constitutes a sort of little savings box, in which he deposits all his wages over and above what is absolutely necessary for the support of himself and his family, as well as all the spare hours and half hours that would otherwise be unemployed. Every additional deposit therein tends, as with children who have penny-boxes, to increase his desire of accumulation, and to increase the habit of industry and economy. With the growth of population, the number of these little savings banks is steadily increasing, and by degrees a wealthy community arises, the members of which, by combining their means, are enabled to create money-shops, at which poor but honest and industrious men can obtain loans, while applying other portions of those means to the construction of turnpike roads, and ultimately railroads or canals. Wealth attracts wealth; and every new house, or town, or city, or road, whether of stone or of iron, tends to bring new labourers and to produce new divisions of land, new houses, and new savings boxes, and to cause the construction of new roads and canals. In the South these little savings boxes have no existence. The labourer has no property, and has no inducement to exertion, and his master has no economy. The land is exhausted, and deteriorates in value until at

length both labourer and employer are compelled, if they would continue to live, to run away from it. In the first case we see the attractive power of wealth, while the second exhibits the repulsive power of constantly increasing poverty. Population diminishes, and land loses the little value it once possessed.

The people of the South burn the candle at both ends. They offer no inducement to economy or exertion on the part of those who labour, and they despise labour too much to acquire, themselves, the habit of employment, by aid of which they would become economical. In New England, all work and all spend liberally in proportion to their means; but there is very little waste of either labour or capital. The results of these different modes of action are widely different. The Southern planter is like the elephant, who leaves behind him scarcely any record of his existence; while the Yankee resembles the coral insect, whose labours and habits of association are attested by the formation of extensive islands destined, perhaps, at some future time to be combined, by the farther labours of these industrious creatures, into a vast southern continent. Were the people, *white and black*, of South Carolina swept away, what would remain to give value to the lands? Almost nothing! Compare, I pray you, the condition in which their successors would stand, with that of an equal number coming at once into possession of Massachusetts, with its towns and cities, its factories and ships, its turnpikes and railroads, and then answer for yourself the question "Why it is that land in the South is so nearly worthless!"

Mr. Calhoun holds that South Carolina exhibits to the world a model of society the most perfect that exists. If other people thought so, there would be an influx of population and of wealth. *If his countrymen thought so themselves they would not run away from it as they do.* If it were really so, there would be a gradual diminution in the size of farms or plantations, and an increase in the number and quality of houses, whereas the present tendency is directly the reverse. If they wish to continue their society in its present state of perfection, they must resign themselves to constantly increasing depopulation and poverty. If, on the contrary, they desire their lands to become valuable, they must make it the interest of the labourer to work and to economize, by securing to him the enjoyment of the results. They must teach the *people* to make saving funds by aid of which, eventually, railroads and canals will be constructed; and nothing will be done to render pro-

* The United States are the largest landholders in the world, and they obtain their land on the lowest terms. Nevertheless, they would be ruined by the ownership were it not for their entire exemption from contributions, in the form of taxes, toward the improvement of their own property. They sell the best lands, and the purchasers pay the taxes thereon for making roads and building court-houses, while making private contributions for churches, &c., &c., and thus the second, and third, and fourth qualities gradually acquire value equal to \$1 25 per acre, and are sold. But for this, the public lands would bankrupt the Treasury, although obtained originally for almost nothing.

erty valuable until *the whole people* shall have acquired an interest in exerting themselves for the accomplishment of that object. When this shall come to be done, wealth and population will increase and emigration will diminish; but until it shall be done, the former will diminish and the latter will increase, as will be proved by every day's further experience. The sooner they satisfy themselves that slavery, although bad for the slave, is worse for the master, and adopt measures for *permitting** the gradual extinction of the system, the sooner will land acquire value; but until that time shall come, the tendency will be rather downward than upward.—*Farmers' Library.*

A Visit to Virginia.

A WRITER in the *National Standard* says, "We called upon the late President, Mr. Tyler, residing on the north side of James River, about thirty miles below Richmond. To say he is a good cultivator would be small praise. He informed us that when he moved on his farm, three years since, a field of wheat of two hundred acres, which he showed us, would not produce more than the seed, but is now waving with a crop of twenty bushels to the acre. The dressing he applied to his land was shell marl, together with straw and other manure, made on the farm. The marl costs three cents per bushel, delivered on the farm. It abounds in sufficient quantities to last for many years. Ten or fifteen miles above the ex-President's, on the same side of the river, is the family seat of the lamented Harrison, also in a high state of cultivation, and perhaps one of the most eligible situations on the James River. From Mr. Tyler's we proceeded to the estate of Robert B. Bolling, Esq., at a distance of ten miles. We there found farming conducted on a gigantic scale, such as had not entered our imagination. He went with us through his field of wheat, which contained *nine hundred acres!* The prospect for a crop was very fine, and we supposed he would have thirty bushels to the acre. He next showed us his grass field, which contained one thousand acres. Owing to the drought it was not as good as expected, but we thought as good as any of ours. His corn, which looked well, though small in consequence of the cold, amounted to near seven hundred acres. The oats, owing to the

* I say "permitting," because I would desire only to see the majority of the people of the South granting to the minority the right to do what they like with their own, and emancipate them if so disposed. I have no desire to see any interference with the right of property.

drought, were backward. The number of acres in oats, I think he said, was three hundred. His entire plantation contained *seven thousand acres of land!* The timber, consisting of white and black oak and pine, is very large except the second growth. He uses lime from the North River, which costs him six cents per bushel, together with straw, which he spreads over his land in the fall and winter—ploughs under, and then dresses with lime. This mode has brought his land to a high state of cultivation. His land a few years back was very poor."

Salem county, June 24th, 1847.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

PHILADELPHIA, SEVENTH MONTH, 1847.

THE *Delaware State Journal* of the 11th ult. says, that the Prices' have purchased and ground at their mills on the Brandywine, this season, 930,000 bushels corn, and 200,000 bushels of wheat.—This, we think, is no trifling business.

It is stated in the *Journal of Commerce*, that a farmer in Bucks County, who lives on the road from Philadelphia to New York, has for several years kept a memorandum of the number of cattle passing his door from the West. The number has varied from 20,000 to 25,000, the former number being about the average. Most of them are from Ohio and Kentucky.

Our readers will observe from the letter of James Gowen, on page 377, that the number of students offering, is not sufficient to warrant him in making decided arrangements for opening his Agricultural College, this coming autumn, as he had contemplated. This we sincerely regret, as we have no doubt his enterprise, and industry, and capital, and good judgement, all combined with an enthusiastic desire to promote the interests of his favorite pursuit, must have resulted in the establishment of a noble institution, whose beneficial influences would have been widely disseminated.

THROUGH the politeness of B. F. Johnson, Secretary of the New York State Agricultural Society, we are in the receipt of the sixth volume of the Society's Transactions; a work of more than 700 octavo pages, and embracing a vast amount of valuable matter, connected with the farming interests of the State, as well as much of a general character.

SINCE our last number was issued, the price of bread stuffs has greatly declined. The reports from Europe—England more particularly—are full of promise for the coming crops of grain. Of the potatoe, accounts are contradictory. It was, perhaps, at our last advices from Ireland premature to form a decided opinion. Wheat flour is now from \$5 50 to \$5 80, and corn 70 cents to 80 cents, in this market.

KEPHART'S PATENT**Fruit and Vegetable Preserver.**

An admirable invention, by which fruits, vegetables, &c., viz. oranges, lemons, apples, pears, peaches, &c.—potatoes, green corn, melons, &c., can be kept as long as desirable with all their natural juices and sweetness. Also, butter, eggs and bacon can be kept throughout the year, fresh and sweet, at an expense not greater than in an ordinary warehouse in the city. A full description will be found in the June number of the Cabinet.

The undersigned having purchased the Patent-right for the United States, except the states of New Jersey, Delaware and Maryland, and the cities of New York and St. Louis, offer for sale Patent-rights for the construction of the *Panmaven*, by states, counties or individual rights, upon terms that will induce all interested in the preservation of the above named articles to purchase rights and construct houses.

FLACK, THOMPSON & BROTHER,
Coates Street wharf, near Fairmount.

All communications will receive prompt attention, if addressed either to **PETER KEPHART**

Western Hotel, Baltimore, Md.

Or to **FLACK, THOMPSON & BROTHER,**
Spring Garden P. O. Philadelphia.

July 15th, 1847.

FOR SALE,**AT D. O. FROUTY'S****AGRICULTURAL WAREHOUSE,**

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from \$1 50 to \$50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for \$14 to \$18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

May 15th—*tc*.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

Philad., Feb., 1847.

M. S. POWELL.
tf.

**Agency for the Purchase & Sale of
IMPROVED BREEDS OF CATTLE & SHEEP.**

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

April 15th, 1847.

NEW**Horticultural and Agricultural Ware-house,**

84 Chestnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1846. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Swede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1847.—ly.

R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish at the usual cash prices, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Seventh month 15th, 1847.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES,

Successor to George M. Coates.

May 15th, 1847.

OF SHORT ADVERTISEMENTS.

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

The quantity of rain which fell in the 6th month, 1847, was a little more than three inches and a quarter.

Penn. Hospital, 7th mo. 1st.

3.30 in.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	\$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	6 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier, AMERICAN Poulterer's Companion,	50
BOUSSINGAULT'S RURAL ECONOMY,	1 25
FARMERS' & EMIGRANTS' HAND-BOOK,	1 50
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUIST'S ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
“ ANIMAL CHEMISTRY,	25
“ FAMILIAR LETTERS,	12½
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☞ We are prepared to bind books to order.

AFRICAN GUANO.

FINEST quality African Guano, from the island of Ichaboe, warranted genuine. Also a few tons Peruvian

For sale by J. B. A. & S. ALLEN,

No. 7 South Wharves, 2nd Oil Store below Market street.

Philadelphia, March 17th, 1847.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coster's street. Present price, \$2 00 per barrel, containing four bushels each, or 40 cents a bushel. Orders from a distance, enclosing the cash, with cost of portage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now ready to supply any demand for turnips, buckwheat, &c.

JOSIAH TATUM.

Phila. 6th mo. 15th, 1847.

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All subscriptions must commence at the beginning of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at

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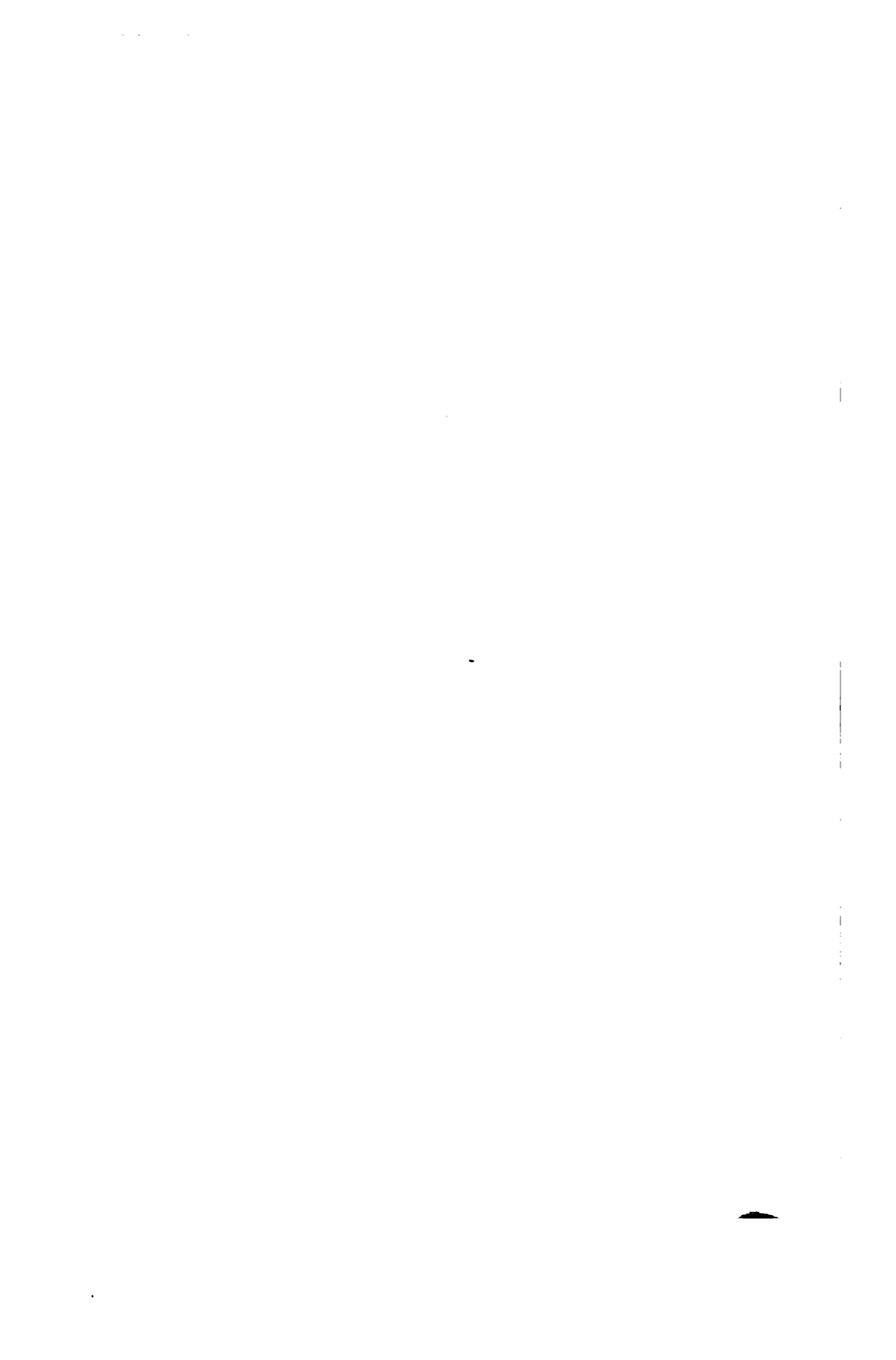
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